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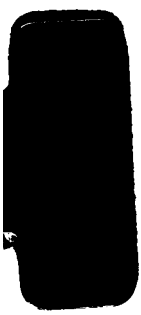

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THE

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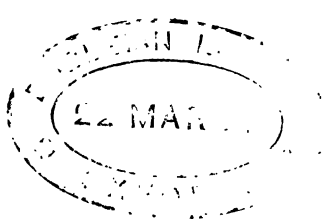

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The Cambridge Examiner.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

(*a*)

1. How was Joram related to Ahaziah? What was Ahaziah's place in the line of the kings of Israel?

2. Where were the following places, and with what events were they connected? Jericho, Bethel, Carmel, Jezreel, Gaza.

3. Senior Paper, No. 1.

4. Explain the following passages by reference to the events to which they allude:

(i) "I am as thou art, my people as thy people."

(ii) "Make this valley full of ditches."

(iii) "I dwell among my own people."

(*b*)

5. In what language and at what place is it supposed that this Gospel was written?

6. What parable and what cures are related by St. Mark alone?

7. State what you know about the Pharisees, the Sadducees, the Herodians, and the Scribes. What two Schools existed within the party of the Pharisees?

(*c*)

8. Senior Paper, No. 9.

9. What facts does St. Paul appeal to as evidence of the deep interest he took in the Corinthian Church?

10. Give some account of Silas, Titus, and Timotheus.

(*d*)

11. What is the meaning of the word "Creed"? What creeds are there besides the Apostolic Creed? When were they drawn up, and by whom? Give Scripture proofs of the articles of the Apostles' Creed.

12. What does the Baptismal vow include? Give the derivation and meaning of the following words as used in the Catechism: renounce, pomps, article, quick, collect, canticle.

13. Explain the passages: "Descended into hell," "the Catholic Church," "state of salvation."

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

(*a*)

1. Write out a list of the kings of Israel and Judah who are connected with the history of this book. Relate the circumstances connected with the death of Ahaziah. On account of what sin is his death spoken of as a judgment?

2. What are the theories with regard to the authorship of the books of Kings?

3. Give a short account of the life of Elisha. What was the meaning of Elisha's plea that a double portion of Elijah's spirit might rest upon him?

(*b*)

4. What are the special characteristics of the Gospel of St. Mark? What information about St. Mark do we glean from the Acts of the Apostles? From what sources is St. Mark supposed to have derived his information?

5. Give several instances in which St. Mark gives in his narrative additional particulars, not mentioned by the other Evangelists, in relating different events.

6. Explain the meaning of the following words as used in St. Mark's Gospel: coasts, chief estates, corban.

(*c*)

7. Divide this Epistle into three main portions, giving the prominent subject taken up in each portion. What were some of the chief complaints made by St. Paul's enemies against him? Where is it supposed this Epistle was written?

8. Comment on the following passages:

(i) "Our trouble which came to us in Asia."

(ii) "By the grace of God we have had our conversation in the world."

(*d*)

9. Where are the first and second Baptismal Collects taken from? Give instances from Scripture of the administration of this rite.

(*e*)

10. According to Paley, are coincidences valuable in respect of their clearness, or their obscurity? Give the reason for your answers.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS XLII.—LXXII. II. NEW TESTAMENT: ST. LUKE; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) BUTLER'S ANALOGY, INTRODUCTION AND PART II. (*b*) PALEY'S HORÆ PAULINÆ, 1 AND 6—16.

I.

1. "Many of the Psalms, while commemorating actual events in Jewish history, are yet prophetic and Messianic." Give examples.

2. On what occasions, and by whom, were the following Psalms supposed to have been written? xlv., li., lv., lxi.

3. What verses from the second book of Psalms are quoted in the New Testament? What use is made of each quotation?

4. Explain, stating the context:

(i) "They are like the deaf adder that stoppeth her ear; which will not hearken to the voice of charms, charming never so wisely."

(ii) "Beautiful for situation, the joy of the whole earth is Mount Zion, on the sides of the north, the city of the great King."

5. What is there remarkable in the complaint contained in Psalm xliv., verses 17—22? How far do these verses help us in determining the date of this Psalm?

6. What is the great lesson to be learnt from Psalm l.? Mention other places in the Scriptures where the same lesson is taught.

7. Explain the geographical and historical references of the following Psalms: lx., lxviii., lxxii.

8. Explain the following figures, and mention other places in the Scriptures where they occur:

(i) "Through thee will we push down our enemies."

(ii) "Thou makest the outgoings of the morning and evening to rejoice."

(iii) "And let not the pit shut her mouth upon me."

(iv) "He shall come down like rain upon the mown grass."

(v) "Let them be blotted out of the book of the living."

9. Compare Psalms lvi. and lvii. Give a brief summary of Psalm lxviii.

II.

10. Discuss the authorship and date of the general Epistle of St. James. Supposing that the author be James, the brother of our Lord, what are we told in the Scriptures concerning him?

11. Give St. James's argument concerning the connexion between faith and works, and compare it with the sayings of St. Paul on the same subject.

12. "In reading this Epistle we are continually reminded of the Gospel according to St. Matthew." Give examples.

13. To whom was this Epistle addressed? What are the special lessons which it is designed to teach?

III. (*a*)

14. What did Bishop Butler consider would be the result of his treatise (i) on believers in Christianity, and (ii) on unbelievers?

15. In Chap. III., Bishop Butler speaks of "our incapacity of judging what things were to be expected in a revelation." Shew that this seems to be opposed to the general drift of his argument, but is not really so opposed.

16. "There are several ways of arguing, which, though just with regard to other writings, are not applicable to Scripture." Discuss this point, giving Butler's opinion and your own.

17. "If in revelation there be found any passages, the seeming meaning of which is contrary to natural religion, we may most certainly conclude such seeming meaning not to be the real one." How far do you consider that this is true? What dangerous use might be made of this statement?

18. In what way may the sacrifices of the heathen world be regarded as a proof that it was necessary that Christ should die for us?

(*b*)

19. What error seems to have prevailed in Thessalonica with regard to those who died before Christ's coming? How does St. Paul correct it?

20. What difference do you find in the manner of St. Paul's teaching when addressing Jews and Gentiles?

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Shew, by a genealogical table, the descent of Henry VII. Discuss the validity of his claim to the throne.

2. Give a short account of the risings in favour of Simnel and Warbeck, drawing particular attention to the claims of each pretender to the throne, and to the support which each received.

3. Account for (i) Parliament meeting seldom during the last years of Henry VII.'s reign; (ii) Poyning's law being passed in Ireland; (iii) the deposition of James III. of Scotland.

4. Mention any measures by which Henry VII. strove to insure the throne to his descendants.

(*b*)

5. Senior Paper, No. 5.

6. Give a short sketch of the history of England, with special reference to Danish influence between 987 and 1042? Do many traces of the Danes remain in England?

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Indicate the chief watersheds of Europe. Trace the course of the Danube, noting any peculiarities of the country through which it flows.

2. In an outline map of the Scandinavian peninsula, insert the most important rivers, mountains, lakes, fiords, and islands, also the following towns: Upsal, Hammerfest, Carlscrona, Bergen, Gottenburg, Christiania, and Stockholm.

3. Indicate a contrast between Europe and Africa in as many respects as possible.

4. Senior Paper, No. 4.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Shew, by a genealogical table, the descent of Henry VII. Give a short account of any of his ancestors, descendants from John of Gaunt, who took a prominent part in public affairs.

2. "None the less was his reign, the reign of an usurper, the reign of one anxious to establish his dynasty, and working for that end, without much regard for the national honour." Justify the above remark on Henry VII.

3. What effect had the Wars of the Roses on the position of the Monarchy? Indicate, as fully as possible, the difference between its position at the commencement and conclusion of those wars.

4. Junior Paper, No. 2.

(*b*)

5. Give a short account of the coming of the English, and describe any institutions they brought with them.

6. Junior Paper, No. 6.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Indicate the chief watersheds of Europe. What are the boundaries of the Danube river basin?

2. Mention any changes in the boundaries of European countries which have been effected during the last fifty years.

3. Junior Paper, No. 2.

4. Describe, as fully as possible, the mountain system of Africa. Draw sectional maps of the country (i) from Cape Verde to Cape Guardafui; (ii) from Tripoli to Cape Agulhas; (iii) from the Bight of Benin to Damietta.

English History.

Higher Local.

(*a*) GENERAL, 1215—1307; (*b*) SPECIAL, 1553—1561.

(*a*)

1. Write a brief life of (i) Hubert de Burgh; (ii) Simon de Montfort; (iii) Grostête.

2. Give the history of the claims of the English kings to Scotch homage.

3. Sketch briefly the foreign wars of Edward I.

4. Stubbs says of Edward I., "Every department of administration felt his guiding and defining hand." Illustrate this statement.

(*b*)

5. Sketch the attempt to place Lady Jane Grey on the throne. How far was her claim to the throne valid?

6. Trace the gradual return to Roman Catholicism under Mary. How far do you think that return was acceptable to her subjects?

7. Discuss the causes of the general dislike of the Spanish marriage.

8. Indicate the position of England with regard to European politics at the accession of Elizabeth.

9. Investigate the causes of the general distress among the working classes under the Tudors.

10. "The founder of the New Monarchy was Edward IV."—GREEN. Examine this view. Explain carefully what you understand by the "New Monarchy."

English Literature.

Junior.

KING RICHARD II.

1. What were the "new additions" printed in the third edition of this play, and how may they be accounted for? Give the date of the first edition.

2. What historian was Shakespeare's principal authority for the facts on which this play is founded? Write a short sketch of the historical incidents which form the ground-work of the play.

3. Senior Paper, No. 3.

4. What peculiarities do you notice in the use of the verbs in the following passages:

(i) "This blot that they *object* against your house."

(ii) "Since we cannot *atone* you."

(iii) "Every tedious stride I make,
Will but *remember* me," etc.

(iv) "Redeem from *broking* pawn the blemished crown."

(v) "They shall *subscribe* them for large sums of gold."

5. Paraphrase: Act. I. Sc. iii. 120—143.

English Grammar.

1. What are adverbs? Compare the adverbs: near, late, sweet, badly. Give examples of adverbs derived from prepositions.

2. Classify the following adverbs according to their meaning: to-morrow, since, therefore, very, rather, twice.

3. Analyse, and parse the words in italics:

"Tell *me, moreover,* hast thou *sounded* him,
If he *appeal* the duke on ancient malice,
Or *worthily* as a good subject should,
On *some known* ground of *treachery* in him."

English Literature.

Senior.

KING RICHARD II.

1. What are the special characteristics of this play? What are its defects as compared with other historical plays by Shakespeare? What do you consider to be the finest passages in this play?

2. What plays on the same subject were acted in 1601 and 1611? With what event was the acting of the first connected?

3. Explain the force and meaning of the words in italics in the following passages:

(i) "If he *appeal* the duke on ancient malice."

(ii) "*High-stomached* are they both and full of ire."

(iii) "It must be great that can *inherit* us
So much as of a thought of ill in him."

(iv) "The which he hath detained for *lewd* employments."

(v) "So I regreet
The *daintiest* last."

4. What charges were brought by the Duke of Hereford against the Duke of Norfolk?

5. Give instances from this play of adverbs and nouns being used as adjectives.

6. Paraphrase Act I. Sc. ii. 9—36.

English Grammar.

1. *Yes* and *No* are sometimes incorrectly called adverbs. Give a better definition of these words. Classify the following adverbs: *accordingly, rather, least, first, whilom.*

2. How are adverbs generally compared? What is the difference between *farther* and *further*?

Correct the following sentences, stating what is wrong:

(i) One unfortunate son only followed his evil example.

(ii) The drawings are not contained in fewer than three portfolios.

3. Analyse, and parse the words in italics:

"Alas, the part I had in *Woodstock's* blood
Doth more *solicit* me than your exclaims
To stir *against* the butchers of his life."

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CAESAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. Sketch as fully as possible Spenser's description of Prince Arthur, introducing such quotations from the *Faery Queene* as are most striking and beautiful.

Comment upon Spenser's ideal character, and discuss the probability of its being drawn from life.

2. Give instances from Canto VII. of

(i) Ideas borrowed from the classics;

(ii) Obsolete words (of which give the meaning);

(iii) Words used with a different meaning to their present.

3. Explain, noting any grammatical or other peculiarities:

(i) "She would no longer bide."

(ii) "And bayes
His sweatie forehead in the breathing wind."

(iii) "Such now he marches to this man forlorne,
And left to losse."

(iv) "Begin and end the bitter bafefull stound
If lesse than that I fear, more favour I have founde."

4. Paraphrase Canto VII. st. 27; *ibid.* st. 41; *ibid.* st. 51.

(*b*)

5. Comment upon the fidelity to the character of Cæsar of:

(i) "Shall Cæsar tell a lie?
Have I in conquest stretch'd mine arm so far
To be afeard to tell gray beards the truth?"

(ii) "If I could pray to move, prayers would move me."

6. Give instances from this play of (i) words used in an unusual sense; (ii) the use of the infinitive active instead of the infinitive passive; (iii) double superlatives; (iv) Alexandrines.

7. Explain, noting any grammatical or other peculiarities:

(i) "Vouchsafe good morrow from a feeble tongue."

(ii) "The noise of battle hurtled in the air."

(iii) "The noble Brutus is ascended."

(iv) "Whilst bloody treason flourished over you."

(v) "And thither will I straight to visit him:
He comes upon a wish."

(vi) "Belike they had some notice of the people,
How I had moved them."

8. Scan:

(i) "She dreamt to-night she saw my statue."

(ii) "Popilius Lena speaks not of our purposes."

(iii) "Most true the will! Let's stay and hear the will."

(iv) "You shall read us the will,—Cæsar's will."

(c)

9. What divine testimony does Bacon adduce in support of the dignity of learning?

10. Explain fully the meaning of the following with regard to the context, and comment upon the force of the arguments to which they respectively belong:

(i) "Which work, so appointed to him, could be no other than the work of contemplation."

(ii) "Men abandoned to vice do not so much corrupt manners as those that are half good and half evil."

(iii) "They (philosophy and human knowledge) minister a singular help and preservative against unbelief and error."

(iv) "Then should people and estates be happy, when either kings were philosophers, or philosophers kings."

11. Give six instances from the *Advancement of Learning*, Book I. (i)—(vii), of each of the following:

(i) The introduction of Biblical metaphors or ideas;

(ii) Close imitation of classical authors;

(iii) Latinisms;

(iv) Obsolete words.

12. Write an essay on two of the following subjects:

(i) The beauties which cause Hooker's *Ecclesiastical Polity* to be looked upon as one of the masterpieces of English eloquence.

(ii) The peculiarities which mark Greene's *Looking Glass for London and England*, and the relationship of that author to Shakespeare.

(iii) The question of the authorship of *Tamburlaine* by Marlowe or Nash.

(iv) Sir Philip Sydney's *Arcadia* and *Defence of Poesie*.

English Language.

Anglo-Saxon Chronicle, Parker ms. (Earle's Edition) Annals 755 to 855.

1. Compare the personal pronouns in Anglo-Saxon with their modern English forms, and also with the High German. Decline ie and ðu in singular, dual, and plural.

2. At what period did the distinction between the accusative and dative of the masculine third person disappear? and when did the modern possessive *its* begin to take the place of the old neuter genitive?

3. Give the masculine accusative and genitive of incer and úre, and decline hwá and ðes in all genders.

4. How is the relative expressed in Anglo-Saxon? Give instances.

5. Translate: Parker MS., Annals 787, 823, 835, 837, 851, 853. Parse *nyste* (787); *anídde* (823). Explain "hie tó ánum gecierdon;" "feorðe healf hund;" and "hie him alle gehiersume dydon"

6. Is there anything remarkable in the genealogy of Æðelwulf in 855? Does it throw any light on the question at what date the Chronicle was compiled?

7. Translate without a dictionary:

(i) ðaet genip ðám ðe ðeoden self scóp nihte naman.

(ii) ðám ðe naefð, ðaet him ðincð ðaet he haebbe, ðaet bið him aetbroden.

(iii) and hí ðá ðider urnon swá hwelc swá ðonne gearo weard and radost.

8. Translate into Anglo-Saxon:

Verily as he went, there flew a certain eagle before him on the journey, and he began to ask his companion who should feed them that day. They went journeying on, and behold, the eagle sat on the shore with a fish which he had caught. Then said the saint to his companion, Run to the eagle, and take from him a portion of the fish which he has caught for a meal for us two.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. How many declensions are there in Latin? Decline, and give the gender of (i) three nouns of the first, (ii) three nouns of the second declension.

2. What is meant by (i) an *active*, (ii) a *passive*, (iii) a *deponent* verb? Give examples of each.

3. Classify the Latin adjectives according to their terminations. Give illustrations to your answer.

4. Classify the Latin prepositions according to the cases they govern, and give examples.

5. Translate with short marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions:

VIRGIL, *Aeneid*, II. 3—13 and 57—66.

CAESAR, *De Bell. Gall.* III. c. 2.

6. Give a short sketch of the events narrated by Virgil in the first book of the *Aeneid*.

7. Translate into Latin:

(i) The father and the mother are happy.

(ii) You and I will go to Rome.

(iii) Virtue, wisdom, and good luck, are the best things for a happy life.

(iv) The sun is both larger and more distant than the moon.

(v) He came to me, but I was not in the house.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. How many declensions are there in Latin? Decline, and give the gender of one noun belonging to each declension.

2. Decline, *bonus rex, ingens iter, fortis mulier*, and translate and decline, *happy boy, just judge, wretched day.*

3. What is meant by (i) an *active*, (ii) a *passive*, (iii) a *deponent* verb? Give examples of each. How many moods are there in a Latin verb?

4. Write out a list of the Latin prepositions, classified according to the cases they govern, and state which of them follow the word they govern.

5. Translate with short marginal notes, explaining (i) all difficulties of construction, (ii) all allusions:

VIRGIL, *Aeneid* II. 3—13 and 57—66.

LIVY, XXI. c. 3.

6. Give a short sketch of the events narrated by Virgil in the first book of the *Aeneid.*

7. Translate, if possible without a dictionary:

(i) When these things were done, the Roman general dismissed the soldiers.

(ii) Caesar went to the camp to see the prisoner.

(iii) I never saw a more complete and sudden defeat.

(iv) After breaking down the bridge, they waited for the enemy.

(v) All the inhabitants fled to Rome, and the country was deserted.

(vi) Utque sedens vester primi prope limina tecti
Janitor egressus introitusque videt.

Latin.

Higher Local.

LIVY I.; HORACE, ODES, III.

1. Give the imperative present and future active and passive of *capio, dico, moneo, peto, audio.*

2. What is meant by (i) the ablative absolute, (ii) the ablative of price, (iii) the ablative of quality, (iv) the ablative of point of time? Give illustrations to your answer.

3. Parse the following: *metuendum, amatum, senis, severis, triveris, acri, siveris.*

[4.] State any general rules you know as to the order of words in a Latin sentence.

5. Translate with marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions:

LIVY I. c. xxvi. §§ 6, 7, 8, from "lex horrendi" to "ad populum est," and c. xxxii. §§ 6, 7, 8, from "Legatus ubi" to "mutatis peragit."

HORACE III. xiii.; xvi. 1—18, and 33—44.

6. Give a short account of the functions of (i) the king, (ii) the senate, (iii) the Comitia Curiata, during the time of the Roman monarchy.

7. Translate, without a dictionary:

Sicine me patriis avectam, perfide, ab oris,
Perfide, deserto liquisti in litore, Theseu?
Sicine discedens neglecto numine divom
Immemor a, devota domum periuria portas?
Nullane res potuit crudelis flectere mentis
Consilium? tibi nulla fuit clementia praesto,
Inmite ut nostri vellet miserescere pectus?

[8.] Translate into Latin prose:

In the reduction of the enemy to submission the Admiral had a less easy task to accomplish than those who had been the first to enter the country. His predecessors had found allies in the natives from their disaffection to their Spanish conquerors, while he was in the position of one who had to enforce servitude on men who had tasted the sweets of freedom.

Greek.

Junior.

XENOPHON, ANABASIS, VII.; EURIPIDES, HERACLEIDAE.

1. How many declensions are there in Greek? Decline two nouns in each.

2. State how many genders and numbers there are in Greek, mentioning any point which is peculiar to this language.

3. Classify the Greek prepositions according to the cases they govern. Give examples.

4. How many voices are there in a Greek verb? Explain their meaning and usage.

5. Translate, with short marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions:

XENOPHON, *Anab.* IV. c. i. §§ 2, 3.

EUR. *Heracl.* 1—16.

6. Give a short account of the events narrated by Xenophon in the first three books of the Anabasis, and explain the meaning of the title.

7. Translate into Greek:

(i) The two brothers will go together.

(ii) The king commanded the general to lead the soldiers against the enemy.

(iii) When the sun rose, they left the city.

8. Translate:

(i) *Τί ταῦτα διαλογίζεσθε ἐν ταῖς καρδίαις ὑμῶν; τί ἐστιν εὐκοπώτερον, εἰπεῖν τῷ παραλυτικῷ, Ἀφέωνταί σοι αἱ ἁμαρτίαι, ἢ εἰπεῖν, Ἔγειραι, καὶ ἆρόν σου τὸν κράββατον καὶ περιπάτει;*

(ii) *Ἡ γὰρ καύχησις ἡμῶν αὕτη ἐστὶ, τὸ μαρτύριον τῆς συνειδήσεως ἡμῶν, ὅτι ἐν ἁπλότητι καὶ εἰλικρινείᾳ Θεοῦ, οὐκ ἐν σοφίᾳ σαρκικῇ, ἀλλ' ἐν χάριτι Θεοῦ ἀνεστράφημεν ἐν τῷ κόσμῳ, περισσοτέρως δὲ πρὸς ὑμᾶς.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate into Greek, decline fully, and give the gender of the following: *citizen, island, gift, disease, honour, city, king.*

2. Classify the Greek adjectives according to their terminations. Give illustrations.

3. How many moods, voices, and numbers are there in a Greek verb? Explain, as clearly as you can, their respective meanings and usage.

4. Give the present and future indicative and future optative of *εἰμὶ, I am.*

5. Translate, with short marginal notes, explaining (i) all difficulties of construction, (ii) all allusions:

PLATO, *Apol.* c. I.

EURIPIDES, *Heracl.* 1—16.

6. Who were the accusers of Socrates, and what were the charges brought against him?

7. Translate (if possible without a dictionary):

(i) When the sun had risen, the soldiers advanced against the foe.

(ii) The city was taken by the Athenians, who destroyed the fortifications and sold the inhabitants as slaves.

(iii) *ὦ τέκνα, τέκνα, σφῷν μὲν ἔστι δὴ πόλις*
καὶ δῶμ', ἐν ᾧ λιπόντες ἀθλίαν ἐμὲ
οἰκήσετ' αἰεὶ μητρὸς ἐστερημένοι.[1]

[1] *στέρεω* = to deprive, bereave.

8. Translate:

(i) *Τί ταῦτα διαλογίζεσθε ἐν ταῖς καρδίαις ὑμῶν; τί ἐστιν εὐκοπώτερον, εἰπεῖν τῷ παραλυτικῷ, Ἀφέωνταί σοι αἱ ἁμαρτίαι, ἢ εἰπεῖν, Ἔγειραι, καὶ ἆρόν σου τὸν κράββατον καὶ περιπάτει;*

(ii) *Ἡ γὰρ καύχησις ἡμῶν αὕτη ἐστὶ. τὸ μαρτύριον τῆς συνειδήσεως ἡμῶν, ὅτι ἐν ἁπλότητι καὶ εἰλικρινείᾳ Θεοῦ οὐκ ἐν σοφίᾳ σαρκικῇ, ἀλλ' ἐν χάριτι Θεοῦ ἀνεστράφημεν ἐν τῷ κόσμῳ, περισσοτέρως δὲ πρὸς ὑμᾶς.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; AESCHYLUS, PROMETHEUS.

1. Give the first person singular of the perfect and first aorist indicative passive of *λέγω, διδάσκω, ποιῶ, τέμνω, βάλλω, δείκνυμι, πλασσω.*

2. Explain what is meant by (i) the genitive absolute, (ii) the genitive of price, (iii) the instrumental dative, (iv) the cognate accusative. Give illustrations.

3. Explain the construction and meaning of *πρὶν* and *πρὶν ἂν.*

[4.] What is the meaning of an *historic* as contrasted with a *primary* tense, and how far is the distinction important in Greek?

5. Translate with marginal notes, explaining fully (i) all difficulties of construction, (ii) all allusions:

THUCYDIDES, IV. 65.

AESCHYLUS, *Prometheus Vinctus* (Paley's text) 519—533 and 542—554.

6. Give a short account of what you can gather of the religious beliefs of Aeschylus, quoting in illustration from the *Prometheus*, or any other play of his with which you are acquainted.

7. Translate into English without a dictionary:

Κατέβην χθὲς εἰς Πειραιᾶ μετὰ Γλαύκωνος τοῦ Ἀρίστωνος, προσευξόμενός τε τῇ θεῷ καὶ ἅμα τὴν ἑορτὴν βουλόμενος θεάσασθαι τίνα τρόπον ποιήσουσιν ἅτε νῦν πρῶτον ἄγοντες.

[8.] Translate into Greek prose:

S. You have formed at present no idea of style.

E. I never think about it. First I consider whether what I am about to say is true; then whether I can say it with brevity, in such a manner as that others shall see it as clearly as I do in the light of truth.

9. Translate:

(i) *Ἑστωσαν ὑμῶν αἱ ὀσφύες περιεζωσμέναι, καὶ οἱ λύχνοι καιόμενοι. καὶ ὑμεῖς ὅμοιοι ἀνθρώποις προσδεχομένοις τὸν κύριον ἑαυτῶν, πότε ἀναλύσει ἐκ τῶν γάμων, ἵνα ἐλθόντος καὶ κρούσαντος, εὐθέως ἀνοίξωσιν αὐτῷ.*

(ii) *ὁ δὲ καρπὸς τοῦ πνεύματός ἐστιν ἀγάπη, χαρὰ, εἰρήνη, μακροθυμία, χρηστότης, ἀγαθωσύνη, πίστις, πραότης, ἐγκράτεια. κατὰ τῶν τοιούτων οὐκ ἔστι νόμος.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate:

Elle ne s'occupe *que* de l'esprit. On *l'*aurait *vue* se dévouer. L'enchaînement des pensées *est* toujours motivé, mais il *l'*est par le sentiment *qui les* inspire. Je ne doute pas qu'il *ne vienne* bientôt. *Il* m'est arrivé *un grand malheur.*

(i) Parse and explain carefully any grammatical peculiarities in the words in italics.

(ii) Give the future and subjunctive of the verbs *appeler, jaillir, y avoir, devoir.*

2. Give the feminine of *grec, parisien, captif, faux, premier,* and write down six examples of adjectives forming their feminine after each rule.

3. Correct the following, and explain your answer, giving other examples:

(i) Il s'est fait tué.

(ii) Effrayé par cette tempête, ils se crurent perdu.

(iii) Je n'ose pas le faire.

4. Of what gender are nouns ending in *s, i, é, eur, ion, ence, a, ette?* Give any exceptions you know.

5. Explain the terms *homonym, complement, apposition, antecedent, Gallicism.* Illustrate your answer by examples.

6. Translate:

Those strong and stately spearmen, so bronzed, so scarred, so splendid in dress and armour, were the very warriors who had withstood the fury of all Pharaoh's chariots and horsemen, nor yielded one cubit of ground, though sore outnumbered and beset, while they covered the great king's passage of the famous river.

7. Translate *Le Directoire,* p. ix., l. 34 to p. x., l. 14; also p. x., l. 23 to l. 37.

8. What was the French Directory? When did it come into power? Give a short account of Madame de Staël, and mention any other of her writings.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Translate, *Le Directoire*, p. xii., l. 8 to p. xiii., l. 3, "Plus ses louables motifs" to "d'en parcourir."

(i) Give the 1st person singular and plural of the primitive tenses of *veulent, croyions, liront, croissant, développés.*

(ii) Write in full the subjunctive present and imperfect of *jaillir, répand, mis.*

(iii) Account for *ne* in *n'a eu le temps*, &c. Give other instances of its use in a similar way.

(iv) Give masculine and feminine plural of *égal, beau, tout, roux.*

2. Give a slight historical sketch of the French Directory.

3. Mention some other works of Madame de Staël. Give a short description of her life and style.

4. Translate:

Voilà les contes bleus qu'il vous faut pour vous plaire,
Ma bru. *L'on* est chez vous contrainte de se taire:
Car madame, à jaser, tient le dé tout le jour.
Mais enfin je prétends discourir à mon tour:
Je *vous* dis que mon fils n'a rien fait de plus sage
Qu'*en recueillant* chez soi ce dévot personnage;
Que le ciel au besoin l'a céans envoyé
Pour redresser à *tous* votre esprit fourvoyé;
Que, pour votre salut, vous le devez entendre;
Et qu'il ne reprend rien qui ne *soit* à reprendre.

(i) What is the gender of words ending in *u* and *é*? Give any exceptions.

(ii) Comment on the words in italics.

5. Give fully the rules for the use, omission, or repetition of articles before nouns, and illustrate each by examples.

6. Correct the following if necessary, and explain your reasons for so doing:

(i) Elle a obéit la voix de Dieu.
(ii) J'ai ôté le livre de ma sœur.
(iii) Quelques riches qu'ils sont.

7. Translate into French a short passage from any standard author. (N.B. Not *less* than ten lines.)

8. Translate, *Le Misanthrope*, Act I., Sc. i., "Alceste.—Non je ne puis souffrir" to "du tout mon fait."

9. In what year was this play written? With what reception did it meet?

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. "La cour d'Henri IV. s'était espagnolisée." Account for this, and shew its immediate and final effect on the French language.

2. "L'époque littéraire des langues est ordinairement celle de leur décadence au point de vue purement linguistique." Apply this to the language of the 17th century, and compare the French of this period with that of the 13th century with regard to expression.

3. Derive *hélas, néanmoins, Passey-lèz-Paris, hormis.* Give the history of the words from which they are derived, and illustrate their use in old French.

4. Translate:

Je ne *sais ni tromper,* ni feindre, ni mentir,
Et quand je *le* saurais, je *n'y puis consentir:*
Je ne sais point, *en* lâche, essuyer les outrages
D'un faquin orgueilleux qui vous tient à ses gages,
De mes sonnets flatteurs lasser tout l'univers,
Et vendre au plus offrant mon encens et mes vers.
Pour un si bas emploi ma muse est trop altière:
Je suis rustique et fier, et j'ai l'âme grossière;
Je ne puis rien nommer, si ce n'est par son nom;
J'*appelle* un chat un chat, et Rolet un fripon.

(i) Point out and account for any grammatical peculiarities in the passages in italics.

(ii) Give the subjunctive present and imperfect of the verbs *feindre, sais, vendre, essuyer, tient.*

5. Give a short account of Boileau. What was the object of his writings? Who were his models? Compare his works with those he imitated, and shew points in which he excels or falls short of them.

6. Translate:

A contemporary of the period, who reflected on the onward march of the new religion over every obstacle in its path, who had seen it gather under its banners states and nations once the most loyal and potent vassals of Rome, would have had little reason to doubt that, before the end of the century, the reform would have extended its sway over the whole of Christendom.

7. Translate from *L'Art Poétique,* Chant I., l. 28 to l. 40, "Quelque sujet" to "leur prix," and Chant IV., l. 90 to l. 120, "Que votre ame" to "de honteuses brigues."

German.

Junior.

UHLAND, ERNST HERZOG VON SCHWABEN.

1. Translate:

Eine Wolke sprach zur *andern*
Auf *dem Wege ihr* begegnend:
"Wohin ziehst du? Was beginnst du?"
Ernst versetzt darauf die andre:
"Weiss ich's selber denn?" Zum *Spiele*
Dienen ja wir *armen Wolken*
Allen *Launen* der verborgnen,
Schnellen, wandelreichen *Winde.*

Account for the case of the words in italics. Give the nominative and genitive singular of all the nouns in the above passage.

2. Distinguish between the strong and weak declension of nouns.

Decline with the article: *Mann, Frau, Kind, Tisch, Mädchen, Buch, Held.* Distinguish between *der Band* and *das Band, der See* and *die See, der Lohn* and *das Lohn.*

3. What gender are nouns ending in *-chen, -niss, -thum, -ung, -keit, -heit.* Give one example of each, and where you can one exception to the rule.

4. Translate:

What have you been doing?—I have written a letter to my brother.—I write to him every week.—Have you time to take a walk with me?—Yes, I will go with you, but I must first take my letter to the post-office.

5. Translate: *Ernst Herzog von Schwaben,* Sc. 2, "*Mangold,* dicht bei den Marmorsäulen" to "dein Werk."

Aufgeschmückt, erstanden, hinabgewallt, wich: give the present indicative imperfect and past participle of these verbs.

German.

Senior.

FREYTAG'S STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 3, "Viel that" to "zu vertheidigen."

Es war ein Grenzland: explain this. What war is alluded to in this passage?

2. Who were the *Habsburger, Bourbonen, Hohenzollern*?

3. Translate:

Von den vier Fürsten, welche ihn seit dem deutschen Kriege bis zu dem Tage regierten, wo der greise König in Sanssouci die müden Augen schloss, hat jeder mit seinen Tugenden und Fehlern wie eine nothwendige Ergänzung seines Vorgängers gelebt.

Who are the four princes here alluded to?

4. Decline *das müde Auge, ein wunderlicher Tyrann, der grosse König, ein anderer Prinz.*

Give some rules for the declension of adjectives in German.

5. Translate into German:

All the world knows of the enormity of London trade, yet few are prepared to appreciate the magnificence of its details. In the narrow byways, where the walls rear themselves so high that looking up one might reasonably expect the stars to appear, as it is said they do when viewed from a deep well, many a house contains a community sufficient to make a German state.

6. Translate: *Ernst Herzog von Schwaben*, Sc. 2, "*Warmann* Thörigt Herz" to "sich versteckt."

Give the present indicative, imperfect and past participles of all the strong verbs in this passage.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Read *Götz von Berlichingen.* Write a short account of the play, mentioning any points that suggest its being composed under the influence of Shakespeare's writings. When was *Götz* written?

2. What would you call the second period of Goethe's writings? Name the chief works of that time.

3. Translate:

Der titanisch-gigantische himmelstürmende Sinn jedoch verlieh meiner Dichtungsart keinen Stoff. Eher ziemte sich mir darzustellen jenes friedliche, plastische, allenfals duldende Widerstreben, das die Obergewalt anerkennt, aber sich ihr gleichsetzen möchte. Doch auch die Kühneren jenes Geschlechts, Tantalus, Ixion, Sisiphus waren meine Heiligen. In die Gesellschaft der Götter aufgenommen mochten sie sich nicht untergeordnet genug betragen, als übermüthige Gäste ihres wirthlichen Gönners Zorn verdient, und sich eine traurige Verbannung zugezogen haben. Ich bemitleidete sie, ihr Zustand war von den Alten schon als wahrhaft tragisch anerkennt, und wenn ich sie als Glieder einer ungeheuren Opposition im Hintergrunde meiner "Iphigenie" zeigte, so bin ich ihnen wol einen Theil der Wirkung schuldig, welches dieses Stück hervorzubringen das Glück hatte.

GOETHE, *Dichtung und Wahrheit.*

Explain this passage by reference to *Iphigenie.*

4. What form do conditional sentences take in German? Give examples.

5. Translate:

In the United States politics have, except on extraordinary occasions, become a game of which the object is to produce artificial excitement, or they resolve themselves into personal intrigues. The issues which are raised are so insignificant as to be indiscernible to foreigners, though they provide occasion for much apparent activity.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Multiply, using as few factors as possible, £375 14*s.* 9¾*d.* by 450.

2. Divide, using short division, £763 18*s.* 11½*d.* by 72.

3. Give all the factors of 472 and 1236, and all the common factors of 3556 and 3444.

4. How many dollars may be exchanged at 4*s.* 2*d.* each for £416 13*s.* 4*d.*?

5. Why must fractions, which are to be added or subtracted, first be reduced to fractions of one common denominator?

Simplify: $(\frac{2}{3}+\frac{3}{8})\frac{5}{6}-\frac{7}{8}(3\frac{1}{2}-2\frac{3}{5})+16\frac{4}{13}$;

also $1456_{9\frac{1}{2}\frac{19}{34}} \div \frac{5203_{\frac{8}{136}}}{17589_{\frac{8}{19}}}$.

6. Reduce 3*s.* 3½*d.* to the fraction of £2 2*s.*; and 17 dys. 16 hrs. to the fraction of 2½ yrs. of 365 days each.

7. Find by Practice the value of 4 oz. 16 dwt. 18 grs. at £4 14*s.* 6*d.* an oz.

8. A cistern is filled by two pipes in 20 and 24 minutes respectively, and emptied by a third in 30 minutes. What portion of it will be filled in 15 minutes when they are all left open together?

9. Determine the difference between bankers' discount and true discount on £4525 paid 146 days before due at 4½ per cent.

10. A grocer had 150 lb. of tea, of which he sold 50 lb. at 9*s.* a lb. and found he was gaining 7½ per cent. At what rate must he sell the remainder so as clear 10 per cent. on the whole?

11. If £200 be due in 6 months, £350 in 11 months, and £730 in 16 months, when should the whole be paid at once?

12. If the course of exchange between London and Amsterdam be 33*s.* 6*d.* Flemish per pound sterling, and between London and Lisbon be 50*d.* sterling per milree, find the arbitrated rate of exchange between Amsterdam and Lisbon.

13. What is the compound interest of £700 for 3 years at 5 per cent. per annum? The interest paid half-yearly.

14. *A* and *B* join their stocks in trade. *A* advances £50 for 4 months and *B* £60 for 5 months. What is each person's share of the gain or loss?

15. If *A* can do a piece of work in 1 hour, *B* the same in 3 hours, *C* in 5 hours, and *E* in 7 hours; in what time can they all working together do a piece 11 times as great?

16. A person sells out of the Three per Cents. at 96 and invests in railway five per cent. stock at par; find by how much per cent. his income is increased.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. What are the requisites of a good definition? Do all Euclid's definitions fulfil these? If not, indicate which fail to.

2. Define a straight line, rectilineal figure, and all the quadrilateral figures Euclid defines.

3. Distinguish between a theorem and problem, and classify the first twelve propositions of Euclid I. as theorems or problems.

4. From a given point draw a straight line equal to a given straight line; then quote in full every axiom, definition, or proposition you have referred to in so doing.

5. From the vertex A of an isosceles triangle ABC produce BA to D and make AD equal to BA; join CD; and shew that BCD is a right angle.

6. Upon the same base and on the same side of it there cannot be two triangles that have their sides, which are terminated in one extremity of the base, equal to one another, and their sides which are terminated in the other extremity of the base equal also.

7. Draw a straight line perpendicular to a given straight line of limited length from a given point without it.

8. From two given points on the same side of a given line draw two lines which shall meet in that line and make equal angles with it.

9. If a side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

10. If two opposite sides of a quadrilateral figure be equal to one another, and the two remaining sides be also equal, the figure is a parallelogram.

11. If two circles touch each other externally, and parallel diameters be drawn, the straight lines joining the opposite extremities of these diameters will pass through the point of contact.

12. The difference between the squares on any two straight lines is equal to the rectangle contained by the sum and difference of those lines.

13. If two isosceles triangles be of equal altitude, and the sides of one be equal to the sides of the other, shew that their bases must be equal.

14. In equal circles the angles which are subtended by equal arcs, whether they are at the centres or at the circumferences, must be equal.

15. If from any point without a circle two straight lines be drawn, one of which cuts the circle and the other touches it, the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, must be equal to the square on the line which touches it.

16. If two circles cut each other, the greatest line that can be drawn through the point of intersection is that which is parallel to the line joining their centres.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—13 inclusive.
Higher Local work Nos. 8—16 inclusive.

1. Define coefficient, factor, index, root, and highest common factor.

2. Find the numerical value of $a^4+4a^3b+6a^2b^2+4ab^3+b^4$, and of $a^2+b^2+2bc+c^2+d^2+2de+e^2+f^2$, when $a=1$, $b=2$, $c=3$, $d=4$, $e=5$, $f=0$.

3. Prove that

(i) $a+b=b+a$;
(ii) $a-(b+c-d+e)=a-b-c+d-e$;
(iii) $a^n \times b^n = ab^n$;
(iv) $a^m \times a^{-n} = a^{m-n}$.

4. Multiply $x^5+5x^4y+10x^3y^2+10x^2y^3+5xy^4+y^5$ by $x-y$.

Divide $x^4+3x^3y-16x^2y^2+3xy^5+y^6$ by $x^2-3xy+y^2$.

5. Resolve into factors:

(i) x^2-144;
(ii) $x^2-22x+120$;
(iii) $x^2-12xy-13y^2$;
(iv) x^4-81.

6. State and prove the rule for finding the H.C.F. of two or more expressions.

Find the H.C.F. of
$3x^4+4x^3-6x^2-12x-5$ and $3x^5+7x^4-2x^3-18x^2-17x-5$.

7. Solve the equations:

(i) $\frac{x+6}{2}-\frac{5x-16}{4}=8-x$;

(ii) $\frac{72+6x}{3}-\frac{3x-4}{2}=\frac{64}{3}-\frac{7x}{6}$;

(iii) $x+4y=21$, $7x-2y=27$;

(iv) $x^2+4xy+3y^2=105$, $x^2+2xy+y^2=49$.

8. Solve the equations:

(i) $\sqrt{(4x-12)}+\sqrt{(7x-3)}=\sqrt{9x+13}$;

(ii) $\dfrac{x^2+4x+6}{x-2}=\dfrac{x^2-x-3}{x-4}$.

9. Multiply

(i) $a^{\frac{1}{2}}+2a^{\frac{1}{4}}b^{\frac{1}{3}}+b^{\frac{1}{3}}$ by $a^{\frac{1}{2}}-2a^{\frac{1}{4}}b^{\frac{1}{3}}-b^{\frac{1}{3}}$;

(ii) $x^{\frac{1}{2}}y^{\frac{1}{2}}+4x^{\frac{1}{4}}y^{\frac{1}{2}}+2x^{\frac{1}{3}}$ by $x^{\frac{1}{2}}y^{\frac{1}{2}}+4x^{\frac{1}{4}}y^{\frac{1}{3}}-2x^{\frac{1}{3}}$.

10. Two numbers are in the ratio of 2 to 9, and if 8 be added to each they are in the ratio of 3 to 10; find the numbers.

11. Sum the series of an arithmetical progression, the number of terms, the first term and the common difference being supposed known. Find the sum of the squares of the first n natural numbers.

12. There are two numbers, the first exceeds the second by 16, and one-eighth of their sum is equal to one-third of the second number. Find the numbers.

13. Find an arithmetical progression consisting of nine terms such that the sum of the first four terms is equal to one-third of the sum of the last four terms, the first term being 2.

14. Sum to nine terms $\frac{1}{5}+\frac{1}{7}+\frac{2}{49}+\ldots$

Shew that $\sqrt{\cdot 666\ldots}=\cdot 0815\ldots$

15. Find the number of permutations of n things taken r at a time. How many permutations can be made from the letters of the words "Cambridge Examiner" taken three at a time?

16. Shew that any whole number can be expressed in terms of any radix. Transform 1 2 3 4 5 6 7 8 9 from the denary scale into the scale whose radix is 6.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Find the number of degrees in the angle subtended at the centre of a circle whose radius is 12 feet by an arc 10 inches long.

2. Define the sine, cosine, tangent, and supplement of an angle. Find an expression for the cosecant in terms of the tangent.

3. A man standing at a certain distance from a tower observes that it subtends an angle of 75°, he then walks 4 feet and notices that the tower now subtends an angle of 45°. Find the height of the tower.

4. Shew how to solve a triangle, having given two angles and a side. Ex.: $A = 45°$, $B = 60°$, $C = 12$ ft.

5. Find the sine of 18°, hence deduce the sine and cosine of 9° and of 81°.

6. How may the centre of gravity be found experimentally? Find the centre of gravity of a sphere and of a triangle.

7. Two forces act on a particle, the angle between their directions is 45°. Find the magnitude of the resultant.

8. Three forces of 3 lb., 4 lb., and 5 lb. respectively, acting on a particle, keep it in equilibrium. Find the angle between the directions of each two of the forces.

9. A body has fallen through a distance of 288 ft. Find the distance through which it fell in the last second.

10. If the unit of velocity be the velocity of a falling body in one second, and a second the unit of time, find the unit of space.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. The moments of two forces about any point in the line of action of their resultant are equal in magnitude and opposite in direction.

2. Enunciate and prove the principle of virtual velocities for a system of forces in one plane.

3. Describe the lever, and find the conditions of equilibrium when the lever is of any form, and the power and weight act in any given directions.

4. A bullet is fired upwards with a velocity of 1300 feet per second. Find how high it will rise, and the time which will elapse before it again reaches the ground.

5. Two inelastic balls moving in the same direction with given velocities impinge directly upon one another. Find the velocity of each after impact.

6. Two heavy bodies are let fall from the roof of a house at an interval of 2 seconds. How far will they be apart at the end of 4 seconds from the fall of the second body?

7. "The time of descent down all chords of a vertical circle from the highest point is the same."

8. Explain the terms: zenith, nadir, azimuth, right ascension, dip of the horizon, and vertical circle.

9. Explain the causes to which the succession of the seasons is due.

10. What reasons have we for believing that the earth is an oblate spheroid?

11. Name and describe the motions of the moon. Draw a rough diagram illustrating her path in the heavens. Under what conditions only can an eclipse of the moon take place?

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. Prove that $2\sin\frac{A}{2} = \pm\sqrt{1+\sin A} \pm \sqrt{1-\sin A}$.

Find the limits between which $\frac{A}{2}$ must lie in order that $2\sin\frac{A}{2} = \sqrt{1+\sin A} - \sqrt{1-\sin A}$.

2. The cosine of $105° = -\frac{\sqrt{3}-1}{2\sqrt{2}}$. From this deduce the value of the sine of 210°.

3. Find approximately the height of an object which at the distance of 2 miles subtends at the eye an angle of 3 minutes.

4. Solve the equations:

(i) $\sin 7\theta \cos 2\theta + \sin 2\theta = \frac{1}{2}$;

(ii) $\sin 2\theta + \sin 3\theta = 0$.

5. Find the equation to a straight line which passes through the point $(2, -3)$ and makes an angle of 45° with the axis of x.

6. The equations to two straight lines are: $l_1x + m_1y - d_1 = 0$, $l_2x + m_2y - d_2 = 0$. Find the distance between them if they are parallel, and the co-ordinates of their point of intersection if they cut one another.

7. Find the area included between the lines: $x = b + a$, $x + y = c$, $x = c - b$.

8. Find the length of the common chord of two circles whose radii are x and y, and which cut one another at an angle γ.

9. Find the locus of the intersection of two tangents to the parabola $y^2 = 4ax$, whose equations are

$$y = m_1x + \frac{a}{m_1}, \quad y = m_2x + \frac{a}{m_2}.$$

10. The tangents at the extremities of a focal chord intersect at right angles in the directrix.

11. The area of the ellipse is to the area of the auxiliary circle as BC is to AC.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (a), (b), (c), (d). Senior Students will only be examined in (a), (b), and one of the subjects (c), (d), (e).

(*a*)

1. How many elements are at present known? Give examples of methods by which it is possible to distinguish a chemical compound from (i) an element, (ii) a mechanical mixture.

2. What gas is withdrawn from the air when a substance is burnt, and what becomes of it?

3. How do the metallic differ from the non-metallic elements? Give a list of the latter.

(*b*)

4. Describe carefully the preparation of oxygen from potassic chlorate. Having obtained oxygen, how would you cause it to combine severally with sulphur, iron, and carbon?

5. How can you obtain water from the gases oxygen and hydrogen?

(*c*)

6. Name the simple machines. Describe, and give familiar instances of the use of the different kinds of lever. What is the formula for ascertaining the mechanical advantage gained by the employment of a lever?

7. Define the terms: physics, statics, hydrostatics, force, tension, friction, motion, momentum.

8. Explain the term "matter." What are the general properties of matter? Describe any experiments by which they have been ascertained.

9. Quote the fundamental law of liquid pressure. Give instances of the practical uses made of the application of the same.

10. Account for the formation of the waves. What is their average velocity, and upon what does it depend?

(*d*)

11. Explain the term "heat." Mention any of the properties of heat. Account for the sun being hot. Does all our heat come from the sun?

12. Describe, and explain the principle on which the thermometer is constructed.

Name the three thermometric scales now in use, and convert into the other two, 32°, 180°, 0° Fahrenheit.

13. Explain what is meant by the expression diffusion of heat. What are the laws which regulate it?

(*e*)

14. Explain the terms: electricity, magnetism, attraction, repulsion, polarity, conductor, non-conductor, and insulator.

15. Distinguish between positive and negative electricity. Given an electrified body, how would you ascertain whether it were charged with positive or negative electricity?

16. Describe as fully as possible a Grove's electric battery.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Give the structure and life history of a unicellular alga. Compare its mode of nutrition with that of the yeast plant. State upon what grounds it is considered a vegetable.

2. State, with reference to examples, the simplest modes in which cell-union occurs, explaining in what way the union is effected.

3. Give an account of the structure and growth of fucus, and also of chara.

4. What is a lichen? Explain its structure and method of reproduction.

(*b*)

1. Describe the most simple animal which you know to exist. How could you prove that it is not a plant?

2. What do you understand by "undifferentiated protoplasm" and a "silicious skeleton"?

3. What is the meaning and derivation of the word "protozoa"? Give a classification of this sub-kingdom. How do the protozoa multiply?

4. Which of the protozoa have been largely instrumental in building up England, and by what means have they done so?

Describe a vorticella and its action during life.

(c)

1. Enumerate the arguments by which it can be proved that the earth is a globe.

2. Describe the motion of the earth to which the succession of day and night is due, and explain why days and nights are not equal.

3. What is a geological section? Draw sections illustrating anticlinal and synclinal curves, a fault, and unconformable strata.

4. How do we know that chalk was formed at the bottom of the sea?

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. By what means can you prove that the air contains both oxygen and nitrogen? How is the volumetric analysis of air effected?

2. What is the meaning and use of chemical symbols, and the numbers implied by them?

3. Explain the term heat, and describe any experiments which have been made to discover its nature and properties.

4. Distinguish between apparent and absolute expansion. Define the terms, coefficient of linear, and coefficient of cubic, expansion. How may the cubic expansion of a solid and a liquid be determined?

5. What definitions have been suggested for the term individual? By instances from the vegetable and the animal world shew the difficulty of deciding what is to be understood by the same.

6. Distinguish between the terms homogenesis and heterogenesis, oviparous and viviparous. Give the conditions under which circumstances each process of multiplication takes place.

(*b*)

1. How do hydrogen salts differ from metallic salts? Why is hydric sulphate said to be dibasic?

2. What is the action of hydrochloric acid on zinc, iron, and magnesium? Express the reaction in equations.

3. Explain the following terms: amalgam, basic oxide, alloy, allotrophy, dyad radical, dimorphism.

4. Compare the compounds of oxygen with those of sulphur, and make a table of them to illustrate your comparison.

(*c*)

1. Describe the different ways in which heat may be transmitted or diffused, and give familiar instances of the same. How do you account for heat reaching us from the sun?

2. What is meant by the specific heat of a body? How may the same be ascertained? What is the specific heat of zinc if 8 oz., at temperature 90° C, put into 20 oz. of water at 15° C, raise the temperature to 18° C?

3. Mention the chief sources of the heat (i) of the atmosphere, (ii) of a plant, (iii) of an animal, (iv) of a coal mine, (v) of the sea, (vi) of a flame.

(*d*)

1. Describe the growth in thickness of the stem of elm. Account for the ringed appearance in cross section of such a stem, and in the stem of cycas.

2. In what plants is periderm found, and how is it formed?

3. Compare the arrangement of the tissues in the stems of equisetum, monocotyledons, and ferns.

4. Compare briefly the minute structure of the roots of ferns, grasses, and dicotyledons. How do roots increase in thickness?

(*e*)

1. Draw up a classification of animals breathing by trachea or pulmonary sacs. Describe these structures.

2. Describe the nervous system of blatta orientalis, also the structure of the head and appendages, noting any points of difference between it and crustaceans in these particulars.

3. Give the life-history of one of the insecta having complete metamorphosis, describing minutely the anatomy of the example you select.

4. Describe the asexual methods of reproduction met with in arthropoda. Give examples, pointing out also how alternation of generation occurs.

(*f*)

1. How are the trachea, bronchi, and lungs arranged in man? Give the structure of each, and the microscopic structure of the lungs particularly.

2. What are the differences between venous and arterial blood? Does the absorption of oxygen by blood follow the law of pressures? Explain the meaning and properties of hœmaglobin, oxyhœmaglobin, reduced hœmaglobin, and carbonic oxide hœmaglobin.

3. What is meant by "respiration in the tissues"? Explain, with reference to muscle as an example, whether oxidation takes place in the tissues or in the blood.

4. Describe the effect on the system of an insufficient supply of oxygen in the air breathed.

(*g*)

1. Give an account of the three different types of coral reefs. What may be learnt from a study of atolls and their distribution?

2. What are the principles upon which strata are grouped together in formations?

Make a table of the mesozoic formations of England, with their mineral characteristics and types of animal life.

3. What do you consider to be the origin of mountain chains?

4. How would you recognise a rock as limestone? By what characters would you distinguish between slate and shale?

Logic.

Higher Local.

1. Explain fully the nature of the fallacies in the following arguments:

(i) Universal suffrage is a doctrine of extreme Liberals, therefore as the member for A is an extreme Liberal, he must uphold universal suffrage.

(ii) During the last few years numbers of labourers have suffered from the effects of strikes, therefore we may infer that it would be an advantage to the labouring class if strikes were prohibited by law.

(iii) Many attempts have been made to encourage the British wool trade, therefore if there is an improvement in that trade we may conclude that it is the result of this encouragement.

2. What is meant by the quantification of the predicate? Discuss any objections that have been brought against it.

3. Explain the meaning of the term *inference*, and give examples of inferences improperly so called.

4. Shew clearly the difference between induction and ratiocination. How far is it true that all reasoning consists in induction?

5. Define induction, explaining clearly each part of your definition. Shew what is meant by a general proposition, and discuss the question whether the result of an induction must necessarily be in the form of a general proposition.

6. Explain the following statement: "In every syllogism, considered as an argument to prove the conclusion, there is a *petitio principii*," and reconcile it with the commonly received notion that the syllogism is a process of proof.

7. Examine any objections that have been brought against Mill's theory of the syllogism.

8. What is a perfect definition? Criticise the rule that definition must be *per genus et differentiam*. Is this rule applicable to all definitions?

What is the distinction made between definitions of things and definition of names? Give Mill's view concerning this distinction.

Constitutional History.

SPECIAL PERIOD, 1259—1307.

Higher Local.

1. Sketch the relations of the king and the barons from 1486—1488. Give the outlines of the policy which caused this state of things.

2. Estimate the constitutional importance of the intervention of the "Communitas bachelerie Angliae" in 1259. Give the main heads of the provisions of Westminster.

3. Examine the nature of the Great Parliament in 1265. "Either Simon's views of a Constitution had rapidly developed, or the influences which had checked them in 1258 were removed." What grounds are there for this statement?

4. Trace the causes of the fall of Earl Simon. What measures were taken to secure the peace of the country from his fall to the accession of Edward I.?

Political Economy.

Senior.

1. Give, in your own words, a definition of political economy, wealth, and money. What advantages are gained by using money? Can you mention some of the results which would probably follow if money were no longer used in England?

2. (i) How can labour be made more productive? (ii) Why do wages vary in different employments, and in different parts of the country? (iii) Do you think they will vary more in the future, or less? Give reasons for your answer.

3. (i) Distinguish between capital and wealth, and also between capital and money. (ii) Shew, in detail, the advantages possessed by an artizan who has a little capital, over an artizan who has none. (iii) Can you explain why there is so much capital in England at present?

4. Explain what is meant by a joint stock company with limited liability. What are the advantages of such a company?

5. It has been asserted that the capitalist helps the workingman, while the alms-giver generally degrades him. How far do you consider that this is true?

6. What is meant by Socialism? Discuss the question whether the introduction of any known Socialistic scheme would be likely to lessen the pauperism and misery of the poor in England.

Political Economy.

Higher Local.

1. Why can co-operative stores sell at lower prices than retail shops? Do you think that co-operative stores will take the place of retail shops? Trace briefly the history of exchange from barter to the credit system of to-day.

2. What are the advantages and disadvantages of government management? Is it advisable for the following to be in the hands of government? (i) coinage; (ii) the post office; (iii) railways; and (iv) primary education.

3. What changes took place in Irish land tenure in 1870? Discuss the economic results of those changes.

4. Compare the trades unions of to-day with the trade guilds of the Middle Ages.

5. How is division of labour limited? Point out some of the possible disadvantages of division of labour.

6. Give Adam Smith's maxims of taxation, and discuss how far our present income tax is in accordance with them.

7. Senior Paper, No. 1.

8. Senior Paper, No. 2 (iii), and No. 3 (i).

9. Senior Paper, No. 6.

Music.

Junior and Senior.

1. Write on the F line of the bass stave one of every kind of note, followed by its corresponding rest, and put the name above each. Put a single bar after each note and a double after each rest. Afterwards explain the difference in the value of the notes.

2. What is the difference in the value of a minim, a dotted minim, and a double-dotted minim, and what does a dot placed above or below a note signify?

3. Write six bars each of the value of a semibreve, and make as much variety in them as possible.

4. What are staves and clefs, and of what use are they in music?

5. What other names are given to the treble and bass clefs, and why?

6. Write A, E, and G in as many positions as possible, both on the actual lines of the treble and bass staves, and also on ledger lines placed above and below the staves. Put the name to every note.

7. Give as many signs and terms as you can which are used to express degrees of loudness and softness in music.

8. Copy as neatly as possible any short hymn-tune that you know.

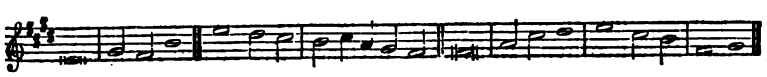
Music.

Higher Local.

1. Explain the chord of the dominant ninth and its inversions, and give an example of each in four parts, with its proper resolution. Does the chord differ in major and minor keys, and if so, how? Which note is generally omitted in the inversions of the ninth?

2. What are the chords of the "leading seventh" and "diminished seventh," and why is the latter so commonly used as a means of modulation? Write two such modulations.

3. Say on what, and how, the chord known as the "Neapolitan sixth" is formed. Write a passage of four bars, with an example of the chord, in F minor.

4. Harmonise the following melody in four parts, and figure the bass:

5. Write counterpoint of the first species in three parts, to the first *canto fermo* of last month's paper. Place the *canto fermo* alternately in all the parts, and write in score.

6. (i) When and why did systematic form become the most important element of composition, and by whom was it perfected? What effect had this predominance of form on the music of the great composers?

(ii) What is a coda, and why was it first used? Describe any changes which afterwards took place in its form and nature.

(iii) Shew the chief points of difference between the sonata or 1st movement form of Mozart and Beethoven.

(iv) Analyse again the "Bourrée" given last month.

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Work of Pestalozzi.*

1. In what various ways may the faculty of judgment be exercised? What particular form of its exercise specially admits of improvement through cultivation?

2. "To make education complete the threefold relation of the child must be regarded; the personal, the social, and the religious relation." Comment on, and amplify the preceding statement, and shew how certain writers on education have laid most stress on the importance of one or other of these relations.

3. What valuable hints did Locke gain from his observation of children's play? What practical application does he make of the ideas thus gained? Give a few instances of the manner in which the same idea is carried out in Frœbel's scheme of education.

4. Write a short sketch of the life of Pestalozzi. Give illustrations of differences in opinion in the educational views of Pestalozzi and Locke which may be naturally accounted for by special circumstances connected with the life of the former.

5. What were the special features of Pestalozzi's mind and character? Shew how they influenced his educational work in the way of advantage or defect.

6. What are the qualities most necessary for the teacher in oral teaching? Why is the power of drawing so valuable to a teacher?

7. What are the chief difficulties about home work? In what way would you propose to meet these difficulties? Do you think the home lessons should be chiefly a resumé of the past day's work, or a preparation for the next day's teaching? Give reasons for your answer.

8. What are the different kinds of punishment which generally fail to influence the minds of the pupils? How would you define the word "tact"?

Remarks and Comments on November and December Answers.

Want of space obliged us last month to omit any remarks on the November answers sent in to us, it must therefore be understood that those we insert in this number apply to either, or both of the months November and December.

In the English Language and Literature (page 394, No. 2) we were disappointed to find similar expressions and ideas to certain in the *Faery Queene* had not been carefully looked out, which, as references were in most cases given in the Clarendon Press edition, argues less research than we might have expected. In the same papers we note that those questions which require a sketch, summary, or epitome of a passage are generally poorly answered, there being no mean between one as short and comprehensive as the heading of a chapter, and one so long as to include all the accessories of the action. It would be well worth a little careful study to distinguish between the essentials and non-essentials of an act. The essays continue poor, and we must remind students that they are to be looked upon not only as exercises in composition but as tests of the careful study of the special period of English literature being prepared for examination.

The Science students who find Elementary paper (*a*) difficult need not conclude that because we are unable to commend some of their answers they must not hope to pass in that section, for we understand that the examination will be quite elementary, and we would therefore encourage them to continue to devote as much time as they can spare from their special subjects to the work of section (*a*), and so doing to be hopeful as to the result.

Those Science students (Higher Local) who are taking up Physics may, when time allows, work the questions on Statics and Dynamics in the paper on Higher Mathematics as well as those in (*a*) and (*c*) of the Science paper, though the answers must be sent in fastened separately and marked "Higher Mathematics."

We should be obliged if in all subjects students would leave a wider margin,—two inches we would suggest as the minimum width.

Recommendations and Rules for Examinees.

1. Write your name and address in the right-hand corner of the first page of each examination paper.

2. Write only on one side of the paper, and leave a margin two inches wide; also leave at least six lines between each answer.

3. Prepare the answers with the assistance of all books at your command, but write them without book or note; and, because it is desirable to become accustomed to answering questions quickly, you are requested to state at the end of each paper the time you have spent over it.

4. It is suggested that it would be well occasionally to do a paper in one subject or another as a real examination, unseen and without preparation.

5. The Examiners do not give the answers to questions which Students do not attempt, unless the point which has presented a difficulty be indicated.

6. The papers, fastened together at the left corner, are to be sent to THE EDITOR, 21, Mortimer Street, Cavendish Square, London, W., not later than the last day of the month.

7. The fee for correction of one Student's papers in all the subjects he intends to offer for examination is £3 3*s*. per annum, for separate subjects £1 1*s*. each, payable yearly or half-yearly in advance to M. HEWETT, P.O.O. payable at Charing Cross Post Office (cheques crossed London and County Bank). Reduction allowed to Teachers, and to Pupils of schools from which more than three Candidates send papers.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

(*a*)

1. What are the chief points related about Jehoram, son of Ahab? With whom did he form an alliance? Who was his chief enemy? Give a short account of this struggle.

2. In what words is Elisha's position as Elijah's servant described? What custom is alluded to in the passage, "It is neither new moon nor Sabbath"?

3. Explain the allusion in the passage, "Not like his father and like his mother." What was the way through the wilderness of Edom? Why was it chosen?

(*b*)

4. What are the most remarkable omissions in the Gospel of St. Mark? Give passages which tend to prove that this Gospel was written for Gentiles.

5. Comment on the following:

(i) "In the evening when the sun was set" (Mark i. 32).

(ii) "Shew thyself to the priest."

(iii) "Herod . . . . observed him."

6. What are the chief points of difference and similarity between the four lists of the Apostles given in the New Testament? Explain the names Simon the Canaanite and Judas Iscariot.

(*c*)

7. Explain the derivation and the meaning of the following words as used in the passages where they occur: conversation, savour, trespasses, tribulation, the earnest.

8. Give some passages in which St. Paul alludes to the close sympathy existing between himself and the Corinthian church. Quote a passage from the Book of the Acts shewing that Silas and Timotheus were with St. Paul at Corinth.

9. How was the intention referred to in 2 Cor. i. 16, 17 afterwards modified? What districts were included in the province of Achaia?

(*d*)

10. What is the history of the Ten Commandments? How did Christ enlarge their scope and meaning in His teaching? Through what types and ceremonies were the sufferings of Christ predicted?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

(*a*)

1. What were the relative advantages which the kingdoms of Israel and Judah had over each other? Whose line of conduct seemed especially to bring a curse on the kingdom of Israel? What was the fate of each kingdom?

2. Junior Paper, No. 1.

3. What special features in the character of the Shunamite woman are indirectly brought out in the narrative? What complaint was probably the cause of her son's death?

4. What plant was probably used by mistake for the wild gourd in the pottage for the sons of the prophets?

(*b*)

5. On what occasions in the life of Christ was a voice heard from heaven?

Give an account of the Temptation, filling in the details omitted by St. Mark.

6. What indirect evidence can be brought forward from this Gospel in support of the idea that St. Mark was aided by St. Peter when writing it?

7. Explain the probable arrangement of the house where the paralytic was healed.

(*c*)

8. What are the chief interpretations that have been given of St. Paul's thorn in the flesh?

9. State the argument contained in 2 Cor. ii. 1—4. What other passage in the Epistle throws light on chap. ii. 13? Explain the mission of Titus and the cause of St. Paul's anxiety.

(*d*)

10. What writer gives us the earliest account of the service used in the Christian Church, and what facts are recorded in that account? Mention some of the different service-books used by the mediæval English Church. What were the Breviary, the Hours, and the Prymer?

(*e*)

11. What is the leading doctrine treated of in the Epistles to the Ephesians and Colossians? Give six examples of similar forms of expression taken from these two Epistles. What is the inference to be drawn from these resemblances?

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS XLII.—LXXII. II. NEW TESTAMENT: ST. LUKE; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) HOOKER'S ECCLES. POL. V. 50—68; (*b*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.

I.

1. Classify the Psalms of Book II. according to their probable date and authorship.

2. Give a brief consecutive sketch of those events in the life of king David to which the Psalms of this book refer.

3. Sketch briefly the conception of the office of (i) king, (ii) lawgiver expressed in these Psalms.

4. In what way would you meet the difficulties suggested to some minds by Psalms lxix. and xxxv.?

5. Who were the sons of Korah? What are the characteristics of the Psalms ascribed to them?

6. Give the context of and explain the following passages:

(i) "For the redemption of their soul is precious, and it ceaseth for ever."

(ii) "In the shadow of thy wings will I make my refuge."

(iii) "As the wings of a dove covered with silver, and her feathers with yellow gold."

7. To what national events do Psalms lxv., lxvii., and xliv. refer?

8. What is the special teaching of Psalm xlix.? Which others treat of the same subject?

II.

9. How far does the teaching of the Epistle of St. James with regard to the Law agree with the spirit of the Epistle to the Gentile churches (Acts xv.)?

10. What references are made by St. James to the Old Testament? Mention any names or expressions peculiar to him.

11. Give the substance of St. James's teaching on (i) religion, (ii) intercessory prayer, (iii) free will, (iv) wisdom.

12. What are the chief characteristics of this Epistle? How far may its local colouring determine its authorship?

13. "Ye have nourished your hearts as in a day of slaughter." "Do ye think that the Scripture saith in vain, the spirit that dwelleth in us lusteth to envy?" Carefully explain any difficulties suggested by these passages, and mention what other readings may be given.

III. (*a*)

14. "For the space of five hundred years after Christ, the Church was almost troubled with nothing else saving only with care and travail to preserve this article from the sinister construction of heretics."

To what does this refer? Verify the statement, and explain the stress laid by Hooker on this particular article.

15. What was the teaching of the Donatists and Arians?

16. Comment on:

(i) "There may be in divers cases life by virtue of inward baptism, even where outward is not found."

(ii) "Every cause is in the effect which groweth from it."

17. What were the three objections to confirmation urged by Cartwright? How may they be answered?

18. On what points does Hooker consider that all agree touching the Holy Eucharist?

19. Carefully explain the terms: sacramentaries, consubstantiation, and transubstantiation.

(*b*)

20. What particular errors was the *Analogy* intended to refute? Give a brief sketch of the state of religious thought in England at the time when Butler wrote.

21. "Christianity is the only religion founded on miracles." What argument does Butler base on this fact?

22. Shew that many objections to religion result from the temper of mind of inquirers rather than from want of distinct evidence.

23. Give the substance of Butler's answer to the objection that "the scheme of the Gospel seems to suppose God was reduced to the necessity of a long series of intricate means in order to accomplish His ends."

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Give a short account of any great discoveries made in the reign of Henry VII., also a sketch of the life of one discoverer.

2. Account for the unpopularity of Henry VII. during the last few years of his reign.

3. Shew that, on his accession to the throne, Henry VIII. was in a more secure position than his father had ever been. By what early measure did Henry VIII. court popularity?

4. What circumstances induced Henry VIII. to send an army into France in 1512? Give a short sketch of its operations previous to the capture of Tournay.

(*b*)

5. Name the claimants to the English throne in 1066, indicating on what their claims rested. Give a short account of the coming of William the Conqueror.

6. Describe *Doomsday Book*, and shew any objects William may have had in instituting the Curfew Bell.

7. Senior Paper, No. 7.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Describe fully the mountain systems of England and Wales, naming the most important heights in each.

2. Give the names and the position of the chief lakes of Europe, noting through which of them a river flows. Account for the formation of lakes.

3. Senior Paper, No. 3.

4. Senior Paper, No. 4.

5. In an outline map of France, mark the mountains, rivers, six seaport towns, six centres of manufacturing industry, six localities of historic interest, also the following places: St. Valery, Arras, Rochefort, Caen, Cette, Pau, Nice.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Indicate the foreign policy of Henry VII. during the early years of his reign. What circumstances brought about the Treaty known as the Great Intercourse? Wherein lay the importance of that Treaty?

2. Give a short account, also the date, of the capture of Constantinople under Mahomet II. What effect had that event on the culture of Western Europe?

3. Under what circumstances were the League of Cambrai and the Holy League concluded? Sketch the action of the Holy League, and give the date of its dissolution.

4. Account for Henry VIII. engaging in war with Scotland. Describe, and give the date, of the battle of Flodden.

(*b*)

5. Junior Paper, No. 5.

6. Indicate any changes made by William the Conqueror in the feudal system as he introduced it into England, and in the position of the Church.

7. What circumstances brought about the battle of Tenchebray? Give its date and results. Sketch the character of Henry I.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Distinguish between a range and a group of mountains by instances from the geography of England. Shew the different effects of the two on the waters which flow from them.

2. Define the term "lake." Describe the different kinds of lakes, giving instances of each in Europe.

3. Give, in tabular form, the names of the countries of Europe with their capitals, and the river (if any) on which the latter stand.

4. Draw a map of the Spanish Peninsula, and mark on it the most important physical features only.

5. Junior Paper, No. 5.

English History.

Higher Local.

(*a*) GENERAL, 1307—1485; (*b*) SPECIAL, 1561—1576.

(*a*)

1. On what grounds did Edward III. claim the French throne? Sketch the wars in which he asserted this claim.

2. Write a short life of Thomas of Lancaster.

3. Examine the causes of the Peasant Revolt.

4. On what grounds did Henry IV. lay claim to the throne? How far do you think this dynastic change affected the balance of power in the State?

5. Give an outline of the Wars of the Roses.

(*b*)

6. Who were the Lords of the Congregation? Sketch the history of the movement which produced them.

7. "The separation of the Catholic powers was the vital point in Cecil's policy, and the sole hope for the security of England." Trace the working out of this policy during this period (1561—1576).

8. Trace the train of events which made Mary, Queen of Scots, a prisoner in England.

9. What circumstances caused Elizabeth to contemplate marriage (i) with the Arch-duke of Austria, (ii) with Anjou, (iii) with Alençon?

10. Give some account of the events which preceded the Massacre of St. Bartholomew, and the effect of that event on English policy.

English Literature.

Junior.

KING RICHARD II.

1. Who was John of Gaunt? Give the date of his birth, and his age when this play opens. Quote the passage in which he speaks about England. Quote the arguments by which he attempts to comfort his son in relation to his banishment.

2. Comment on any grammatical peculiarities in the following passages:

(i) "The cause you come."

(ii) "Or any other ground inhabitable."

(iii) "Such neighbour nearness to our sacred blood."

(iv) "And throw the rider headlong in the lists."

(v) "Whose youthful spirit in me regenerate."

Where was Plashy?

3. Where was the Duke of Lancaster's palace? What name was given to it? Account for the name. Give the list of the sons of Edward III.

4. Paraphrase: Act I. Sc. iii. 154—174; Act I. Sc. iii. 178—190.

5. Senior Paper, No. 2.

6. Senior Paper, No. 1.

English Grammar.

1. Compare the following adjectives: nigh, out, kind, many, old, and exact. What is the rule when the positive ends in a single consonant, preceded by a single vowel?

2. Make up three sentences in which the word *but* is used in each as a different part of speech.

3. Give four examples in sentences of predicative and attributive combination in the case of adjectives.

4. Give the different meanings of the prefixes *a-*, *un-*, *ex-*, *dis-*, with examples. Give examples of Greek prefixes with their meanings.

5. Senior Paper, No. 3.

English Literature.

Senior.

KING RICHARD II.

1. What internal evidence is there that this play belongs to Shakespeare's earlier style? Describe the characters of Richard II. and Bolingbroke, noting especially the points of contrast between them.

2. Explain the following passages:

(i) "This is no month to bleed."
(ii) "There is no boot."
(iii) "All the treasons for these eighteen years."
(iv) "I am disgraced, impeached, and baffled here."
(v) "Who was the model of thy father's life?"
(vi) "The purest treasure mortal times afford."
(vii) "The slavish motive of recanting fear."
(viii) "Alas, the part I had in Glo'ster's death."

3. Junior Paper, No. 4.

4. Give the derivation and meaning of the following words: miscreant, recreant, eager (Act. I. Sc. i.), caitiff, pitch, pawn, gnarling, warder. Illustrate, from the play, the different senses in which Shakespeare uses the word "dear."

English Grammar.

1. What is a cognate accusative? Give examples of its use from Shakespeare. Make up three sentences, introducing a complimentary infinitive. What verbs generally take such an infinitive after them?

2. To what branch of language does the grammar of the English language belong? What classes of English words belong to the same branch?

3. Parse and analyse, *Richard II.* Act I. Sc. iii. 274—279.

4. What twofold uses have the relative pronouns who, which, and that?

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CÆSAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. Give in your own words concisely but fully such part of the narrative of the *Faery Queene* as is contained in Canto VIII.

2. Who were the following, and how distinguished?

"Great Romulus, the grandsire of them all,
Proud Tarquin, and too lordly Lentulus,
Stout Scipio, and stubborne Hanniball,
Ambitious Sylla and sterne Marius,
High Cæsar, great Pompey, and fierce Antonius."

3. In what other writer do ideas similar to the following occur?

"The house of endless paine."

"Birdes of joyous prime."

"His chaunged powres at first themselves not fell."

"Great griefe will not be tould."

"Whose blessed sprites from underneath the stone
To God for vengeance cryde continually."

4. Explain, and give the derivation of the words in italics:

(i) "On cypresse *stadle* stout."

(ii) "He had beene *pouldred* all as thin as flowre."

(iii) "Because *starke* blind, and all his sences dazed."

(iv) "*Kindly* rage."

(v) "The which *unused* rust did overgrow."

(vi) "Whose mighty *brawned bowrs*."

(*b*)

5. Quote, from memory, the oration of Mark Antony over the body of Cæsar. Shew the skill with which, while keeping within the bounds of his compact with the conspirators, he interests the sympathy of the people against them.

6. Comment upon the development of the character of Antony as shewn in Act IV. Sc. i. Does anything in an earlier scene lead us to expect him capable of such treatment as that he proposes for Lepidus.

7. Explain, noting any grammatical or other peculiarities:

(i) "You'll bear me a bang for that, I fear."

(ii) "How to cut off some charge in legacies."

(iii) "One that feeds
On abjects, orts, and imitations."

(iv) "They fall their crests."

(v) "I had rather be a dog and bay the moon."

(vi) "I have as much of an art as you,
But yet my nature could not bear it so."

8. Paraphrase Act. IV. Sc. iii. ll. 65—75 ibid 200—222.

(*c*)

9. Who were the following, and how does Bacon refer to them? Epaminondas, Æschines, Sallust, Hecuba, Helena, Hermoganes, Villeius, Cassander.

10. Comment upon Bacon's use of the following words, and give their derivations: curious, alterations, punctual, exquisite, digladiation, unconstancy, straitly, aspersion, humanities, regiment.

11. Account for Bacon giving incorrectly the story of Alexander and Antipater, and give the correct version.

12. Paraphrase, noting any peculiarities:

(i) "Postquam divus Nerva res olim insociabiles miscuisset, imperium et libertatem."

(ii) "Giving order and making assignation .... for policing of cities and commonalities with new ordinances and constitutions, and granting new franchises and incorporations."

(iii) "The flourishing state of learning, sortable to so excellent a patroness, the convenient estate of wealth and means, both of crown and subject, the habit of obedience, and the moderation of discontent."

(iv) "Verba sapientum tanquam aculei, et tanquam clavi in altum defixi."

13. Write essays on two of the following subjects:

(i) The advantages and disadvantages of the introduction of supernatural agencies to dramatic poetry.

(ii) Nash in his relation to the Martin Max Prelate Controtroversy.

(iii) Mention two or three of the principal pastoral dramas of this period. Trace the source from which we derive this form of poetry. What are its special charms, and to what dangers is it liable?

(iv) On the nature and requirements of epic as distinguished from lyrical and dramatic poetry. Would you call the *Faery Queene* an epic?

English Language.

Anglo-Saxon Chronicle, Parker ms. (Earle's Edition) Annals 860 to 893.

1. What is the chief point of difference between the inflexions of the strong and weak verbs?

2. Give the 3rd person singular present indicative, the 1st person singular and plural, preterite indicative, and the imperative singular of the following: irnan, hátan, beódan, biddan, bídan, swerian, gangan, faran. If any of these belong to both the strong and weak conjugations, give both forms.

3. Explain briefly what is meant by vowel gradation (ablant), with especial reference to the tense formation of the strong verbs in the Germanic languages. Shew how the classification of the strong verbs in Sweet's grammar is founded mainly on this principle.

4. Are there any traces in Anglo-Saxon of the old formation of the preterite by reduplication?

5. Translate, Parker MS., annals 865, 867, 874, 876, 878, 887, 891, 893. Explain, "and hie late on geáre tó ðám gecirdon" (867), "Wesseaxna fierde" (876), "se dáel se hiere behinon sáe waes" (878), "onhlóð wícenga (879), "on hond eódon" (882), "tó his honda healdan" (887), "bútan áelcum gereðrum" (891).

6. In what respect is the year 891 an important date in the history of the MS.?

7. Translate, without a dictionary:

> Ne meahte ic aet hilde mid Hruntinge
> wiht gewyrcan, ðeáh ðaet waepen duge
> ac me geúðe ylda Waldend,
> ðaet ic on wage geseáh wlitig hangian
> eald sweord eácen, oftost wísode
> wineleásum, ðaet ic ðý waepne gebraed.

Parse the words underlined.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline two nouns of the third declension in Latin, one with consonant and one with vowel stem.

2. Decline, translate, and give the gender of the following: *gradus, genu, manus, res, mare, dens, dea, filius, puer.*

3. Give the cardinal numbers from one to twelve inclusive, declining those that are capable of declension.

4. How many regular conjugations of Latin verbs are there? Give the first person singular of the active indicative present and perfect, the infinitive and the supines of two verbs belonging to each conjugation.

5. Translate, with short marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions.

VIRGIL, *Aeneid*, II. 108—119 and 154—161.

CAESAR, *de Bell. Gall.* III. c. 5.

6. Give a brief account of the life of Julius Caesar, with dates where necessary.

7. Translate into Latin:

(i) These books are not mine.

(ii) Your books, my brother, have been given to those children.

(iii) Who will go with me to Athens?

(iv) He asked who was the man he had seen yesterday.

(v) He served a hard slavery.

(vi) The mother asked of the gods happiness for her children.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline fully, and give the gender and meaning of the following: *ovis, tussis, imber, nummus, deus, dea, clavis, animal, manus, res.*

2. Classify the Latin adjectives according to their terminations. Give illustrations to your answer.

3. Give the first person singular of the indicative present and perfect, the infinitive present and the supines in the active voice of one verb of each of the regular conjugations.

4. Classify the Latin interjections according to the cases they govern.

5. Translate with short marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions:

VIRGIL, *Aeneid*, II. 108—119 and 154—161.

LIVY XXI. c. 9.

6. Give a short account of the events which led to the Second Punic War.

7. Translate, if possible without a dictionary:

(i) Ad haec Ariovistus respondit: Ius esse belli ut qui vicissent iis quos vicissent quemadmodum vellent imperarent; item populum Romanum victis non ad alterius praescriptum sed ad suum arbitrium imperare consuesse.

(ii) After the sun had risen, the Roman general went out to see the battle-field, which was covered with heaps of dead and dying men and horses.

Latin.

Higher Local.

CAESAR, DE BELLO GALLICO, V.; VIRGIL, AENEID, V. VI.

1. Give the future indicative and perfect subjunctive of *possum, volo, nolo, eo, fio.*

2. What is meant by (i) the subjective genitive, (ii) the objective genitive, (iii) the genitive of quality, (iv) the partitive genitive? Give illustrations.

3. Translate carefully: That hand (*of yours*).—The hand itself.—That hand (*yonder*).—This hand.—That hand, which.

[4.] Mention any rules you know relating to epistolary composition in Latin.

5. Translate with short marginal notes, explaining carefully (i) all difficulties of construction, (ii) all allusions:

CAESAR, *de Bell. Gall.* V. c. 43.

VIRGIL, *Aeneid,* VI. 65—76 and 103—114.

6. Give a short account of the condition of Britain previous to the landing of Caesar, and estimate the effect of the Roman invasion.

7. Translate, without a dictionary:

Socrates mihi videtur, id quod constat inter omnes, primus a rebus occultis et ab ipsa natura involutis, in quibus omnes ante eum philosophi occupati fuerunt, avocavisse philosophiam et ad vitam communem adduxisse, ut de virtutibus et vitiis omninoque de bonis rebus et malis quaereret, caelestia autem vel procul esse a nostra cognitione censeret, vel, si maxime cognita essent, nihil tamen ad bene vivendum valere.

8. Translate into Latin prose:

The courier who was to take Philip's letters to the three nobles was detained three weeks, in order to allow Armenteros, who was charged with the more important and secret despatches for the Duchess and Granvelle, to reach Brussels first.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully and give the gender and meaning of the following: *πολίτης, δῶρον, τιμή, σοφία, ὕπνος, νῆσος, νόσος, πόλις, βασιλεύς.*

2. Give the genitives singular and plural and the gender and meaning of *ἅλς, θήρ, γίγας, μήτηρ, βοῦς, γένος, κῆρυξ, σῶμα.*

3. Classify the Greek adjectives according to their terminations. Give illustrations.

4. Give the first person singular of the indicative present, future, first aorist, and perfect in the active voice of two verbs in *-ω*, one with consonant, one with vowel stem.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

XENOPHON, *Anabasis* IV. c. 2, §§ 3, 4.

EURIPIDES, *Heracleidae*, 134—143 and 181—192.

6. Give a brief outline of the plot of the *Heracleidae*.

7. Translate into Greek:

(i) Some fought bravely, but the rest ran away.

(ii) He told them that the enemy had taken the city, and that their friends were slain.

(iii) Do not leave us, O mother.

8. Translate:

(i) *καὶ ἐσῆλθε πάλιν εἰς τὴν συναγωγήν, καὶ ἦν ἐκεῖ ἄνθρωπος ἐξηραμμένην ἔχων τὴν χεῖρα, καὶ παρετήρουν αὐτὸν εἰ τοῖς σάββασι θεραπεύσει αὐτὸν, ἵνα κατηγορήσωσιν αὐτοῦ.*

(ii) *εἰ δέ τις λελύπηκεν, οὐκ ἐμὲ λελύπηκεν, ἀλλ' ἀπὸ μέρους, ἵνα μὴ ἐπιβαρῶ πάντας ὑμᾶς· ἱκανὸν τῷ τοιούτῳ ἡ ἐπιτιμία αὕτη ἡ ὑπὸ τῶν πλειόνων.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Give the genitives singular and plural, gender, and meaning of the following: *ἅλς, θὴρ, γύγας, μήτηρ, βοῦς, γένος, κῆρυξ, σῶμα.*

2. Classify the Greek prepositions according to the cases they govern. Give illustrations.

3. Give the first person singular of the active indicative present, future, first aorist, and perfect of *λύω, τέρπω, λέγω, νέμω, πείθω.*

4. Give all the infinitives and participles in use of *εἰμὶ, I am.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

PLATO, *Apology*, c. 7.

EURIPIDES, *Heracleidae*, 134—143 and 181—192.

6. Give a short account of the life and writings of Euripides, with dates where you can.

7. Translate (if possible without a dictionary):

(i) Do not leave the city, soldiers, but remain to defend the walls.

(ii) The women and children were sent to places of safety, so that their lives were not in danger.

(iii) *ἐδόκει τίς μοι γυνὴ προσελθοῦσα καλὴ καὶ εὐειδής, λευκὰ ἱμάτια ἔχουσα, καλέσαι με καὶ εἰπεῖν· ὦ Σώκρατες, [1]ἥματί κεν τριτάτῳ Φθίην [2]ἐρίβωλον [3]ἵκοιο.*

[1]*ἦμαρ* = day. [2]*ἐρίβωλος* = deep-soiled. [3]*ἱκνέομαι* = I come.

8. Translate:

(i) *καὶ ἐσῆλθε πάλιν εἰς τὴν συναγωγὴν, καὶ ἦν ἐκεῖ ἄνθρωπος ἐξηραμένην ἔχων τὴν χεῖρα, καὶ παρετήρουν αὐτὸν εἰ τοῖς σάββασι θεραπεύσει αὐτὸν, ἵνα κατηγορήσωσιν αὐτοῦ.*

(ii) *εἰ δέ τις λελύπηκεν, οὐκ ἐμὲ λελύπηκεν, ἀλλ' ἀπὸ μέρους, ἵνα μὴ ἐπιβαρῶ πάντας ὑμᾶς. ἱκανὸν τῷ τοιούτῳ ἡ ἐπιτιμία αὕτη ἡ ὑπὸ τῶν πλείονων.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, ANTIGONE.

1. Give the present indicative active of *εἰμὶ*, *εἶμι*, *ἵημι*, *φημί*; and parse the following: *εἶναι*, *εἶναι*, *ἰέναι*, *ἶεναι*.

2. Explain what is meant by (i) the exclamatory genitive, (ii) the descriptive genitive, (iii) the ethical dative, (iv) the accusative of respect.

3. Distinguish carefully between the Greek negatives *οὐ* and *μὴ*. Give illustrations shewing the usage of *οὐ*, *μὴ*, *οὐ μὴ*, and *μὴ οὔ*.

[4.] Give the rules for the conversion of direct into indirect questions in Greek.

5. Translate, with marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

THUCYDIDES, IV. c. 87.

SOPHOCLES, *Antigone*, 480—490 and 582—603.

6. Estimate the character of the Antigone of Sophocles, as shewn in the two plays of the *Oedipus at Colonos* and the *Antigone*.

7. Translate without a dictionary:

τέκνον τυφλοῦ γέροντος Ἀντιγόνη, τίνας
χώρους ἀφίγμεθ', ἢ τίνων ἀνδρῶν πόλιν;
τίς τὸν πλανήτην Οἰδίπουν καθ' ἡμέραν
τὴν νῦν σπανιστοῖς δέξεται δωρήμασι,
σμικρὸν μὲν ἐξαιτοῦντα, τοῦ σμικροῦ δ' ἔτι
μεῖον φέροντα, καὶ τόδ' ἐξαρκοῦν ἐμοί;

[8.] Translate into Greek prose:

This speech is a remarkable instance of Demosthenes' earlier manner. A long study of Thucydides, whose influence can hardly be traced in the court speeches of the same period, has here left its manifest mark. The style may perhaps in part be explained by the scrupulous premeditation of a young man before facing the Assembly.

9. Translate:

(i) *καὶ εἶπεν αὐτῷ ὁ διάβολος, Σοὶ δώσω τὴν ἐξουσίαν ταύτην ἅπασαν καὶ τὴν δόξαν αὐτῶν· ὅτι ἐμοὶ παραδέδοται καὶ ᾧ ἐὰν θέλω δίδωμι αὐτήν· σὺ οὖν ἐὰν προσκυνήσῃς ἐνώπιόν μου ἔσται σοῦ πάντα.*

(ii) *Παρακαλῶ οὖν ὑμᾶς ἐγὼ ὁ δέσμιος ἐν Κυρίῳ ἀξίως περιπατῆσαι τῆς κλήσεως ἧς ἐκλήθητε, μετὰ πάσης ταπεινοφροσύνης καὶ πραότητος, μετὰ μακροθυμίας, ἀνεχόμενοι ἀλλήλων ἐν ἀγάπῃ, σπουδάζοντες τηρεῖν τὴν ἑνότητα τοῦ Πνεύματος ἐν τῷ συνδέσμῳ τῆς εἰρήνης.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Write out the verb *entendre*, giving the five primitive tenses, and the tenses they form. Mention six irregular verbs belonging to the same conjugation, and point out in what their irregularity consists.

2. Give the passé défini and imperative of: *s'en apercevoir, s'enfuir, ne pas s'en aller.*

3. Translate:

Quoique cette lettre ne *parte* que dimanche, je veux la commencer aujourd'hui, afin de dater encore du mois de mai: je *crains* que celui de juin ne me *paraisse* pas moins long; je suis assurée au moins de ne pas voir de si beaux pays. Il y a un mois qu'il pleut tous les jours; ce sont vos prières qui nous ont attiré cet excès. Que ne laissez-vous un peu faire à la Providence? Tantôt de la pluie, tantôt de la sécheresse, vous n'êtes jamais contents.

(i) Parse the words in italics. Analyse from "Il y a un mois," to the end.

(ii) Account for the following forms in the above: *ce sont, attiré, contents.*

4. Translate: *Le Directoire*, p. 4, l. 23, to p. 5, l. 20, "M. de Condorcet," to "manière de voir."

(i) Explain the terms *Terroristes, Girondins, Jacobinisme.*

(ii) To what causes does Madame de Staël attribute the excessive fury of the Revolution?

(iii) What do you know of Robespierre, Marat, and Condorcet?

5. Give the meaning of: *s'en prendre à; à tort; les forfaits; les lumières; néanmoins; finesse; abandon; saillies; lecture; de bonne foi.*

6. Translate: A friend of mine has a horse of his own.—I hope you have not hurt your foot very much.—There were more than ten people killed, besides many wounded.—The room was twenty feet long.

7. Give the feminine of: *chanteur, païen, vieillard, loup, dieu, époux, vendeur, héros.*

8. How do you form the plural of proper nouns?

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Translate: *Le Directoire*, p. 1, l. 18, to p. 2, l. 18; also p. 5, l. 5, to l. 28.

(i) Derive the words, *forfaits, forcené, dont, chamarrés.*

(ii) Give the plural of *avant-coureur, passe-partout, grand'-mére.*

(iii) Give the present indicative, and the tenses formed from it, of the verbs *savait, pût, atteindre, enveloppait.*

(iv) When is *quelconque* variable?

2. Enumerate the principal political parties of this period, and shew their share in the Revolution. What do you know of the "guerre de la Vendée" here alluded to?

3. Translate:

Si vous me demandez comment je me trouve ici après tout ce bruit, je vous dirai que j'y suis transportée de joie. J'y serai pour le moins huit jours, quelque façon qu'on me fasse pour me *faire* retourner. J'ai un besoin de repos qui ne se *peut* dire, j'ai besoin de *manger* (car je *meurs* de faim à ces festins) j'ai besoin de me rafraîchir, j'ai besoin de me *taire;* tout le monde m'attaquait, et mon poumon était usé.....Il y a dans cette immensité de Bretons des gens qui ont de l'esprit; il y en a qui sont dignes de me parler de vous.

(i) Mention any peculiarities in the verbs in italics.

(ii) Give a full description of the use of *tout*, mentioning any peculiarities to which it is subject.

4. Translate: *Le Misanthrope*, Act 1. Sc. i., "Mon Dieu des mœurs," to "autant que votre bile."

(i) Give the gender of *mœurs, âme, vertu, cour.* Is it according to rule?

(ii) What is the present form of *paroître*? When did this change take place?

5. Give a sketch of *Alceste* as gathered from Act I. Sc. i.

6. Write a short essay in French on one of the following proverbs:

(i) Une fois n'est pas coutume.

(ii) A force de forger on devient forgeron.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Give the ordinal numbers in old French up to ten. When were they superseded by the present forms? Are any traces of them still left?

2. Il y avait un homme qui, à douze ans, avec des barres et des ronds avait crée les mathématiques;.....qui à cet âge où les autres hommes commençent à peine de naître, ayant achevé de parcourir le cercle des sciences humaines, s'aperçut de leur néant et tourna toutes ses pensées vers la religion; qui fixa la langue qu'ont parlée Bossuet et Racine, donna le modèle de la plus parfaite plaisanterie, comme du raisonnement le plus fort; et qui jeta au hasard sur le papier des pensées qui tiennent autant de Dieu que de l'homme.

Translate this passage, and state to whom it refers.

3. Give a short account of the following works, stating by whom written, and of what events they were the outcome: *Provinciales, Pensées, L'Art de Penser, Essais, De la Fréquente Communion.*

4. Write, *in French*, a short essay on Port Royal, with special reference to its share in the great religious discussions of this period, and its influence on French literature.

5. Translate:

Je chante les combats, et ce prélat terrible
Qui, par ses longs travaux et sa force invincible,
Dans une illustre église exerçant son grand cœur,
Fit placer à la fin un *lutrin* dans le chœur,
C'est en vain que le chantre, abusant d'un faux titre,
Deux fois l'en fit ôter par les mains du chapitre,
Ce prélat sur le banc de son rival altier.
Deux foix, le reportant, l'en couvrit tout entier.

BOILEAU, *Le Lutrin.*

To what class of poetry does *Le Lutrin* belong? Give a short analysis of this poem, and explain what led Boileau to write it. On what was it modelled?

6. Give the French for:

He could not keep his countenance.—Where do men seek their happiness?—You ought to have been able to do without it.

7. Derive *y, en, dont,* and *même,* and construct sentences shewing their use.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 21, "*Kunrad.*—Erlauchte Fürsten" to "zu verleihn."

What is the coronation here referred to? To what ceremony still to be performed does Kunrad refer?

eurer Gegenwart. Why is this in the genitive?

auserkiest. Give the infinitive and the ordinary past participle.

das verwirkte Fahnenlehn. Explain *verwirkte.*

2. Translate:

(i) Nun Herzog Ernst zu Gnaden wieder kam,
Gleich wähnst du dich verstossen und entehrt.

(ii) Wohl wahr, es kommen Augenblicke, wo
Die kampfbewegte Welt mit einem Schlag.
Zum sel'gen Paradies verwandelt scheint.

(iii) Dem Herzog wurmt es ewig um Burgund.

What does this refer to?

3. Distinguish between the strong and weak declension of adjectives. When is each used? Decline the German for:

A large garden.—My beautiful horse.—That green tree.—Fine weather.

4. Write out the perfect indicative of *haben, sein,* and *werden;* imperfect indicative of *sehen, lesen,* and *stehen;* past participle of *verstossen, hinstrecken,* and *verstecken.*

How are passive verbs conjugated in German?

5. Translate:

(i) Wer wagt es, Rittersmann oder Knapp,
Zu tauchen in diesen Schlund?
Einen goldnen Becher werf' ich hinab,
Verschlungen schon hat ihn der schwarze Mund,
Wer mir den Becher kann wieder zeigen,
Er mag ihn behalten, er ist sein eigen.

SCHILLER, *Der Taucher.*

(ii) Yesterday, when I was walking in the garden, I saw some beautiful roses. To-day I meant to gather them, but found them all gone. Who can have taken them?

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 7, "Er beschloss" to p. 8, "nichts wusste."

What circumstance of Frederick's life is here alluded to?

2. *Entfliehen, misslang, aufbrannte, bekannt, begannen, erfahren, nachgedacht.* Give the chief parts of these verbs. State which of them are separable, and give some rules for distinguishing separable and inseparable verbs.

3. Translate into German:

(i) I have written a letter.

(ii) Yesterday I wrote a letter.

(iii) If I had asked you, would you have written the letter?

(iv) Had I been able, I would have written the letter.

In each of these sentences, give a reason for the place you assign to the verb.

4. Translate into English:

Ihr Deutschen von *dem Fluthenbett des Rheines*,
Bis wo die Elbe sich ins *Nordmeir* giesset,
Die ihr vordem ein Volk, *ein grosses* hiesset,
Was habt ihr denn, um noch zu heissen *eines*?

Account for the case of the words in italics.

5. Translate into German:

Above six hundred years ago, in the reigns of king Richard the Second and Richard Cœur de Lion, there lived, in the northern part of England, a most famous outlaw named Robin Hood. The daring exploits and curious adventures of this renowned hero have been celebrated in songs throughout almost every country in Europe.

6. Translate: *Ernst, Herzog von Schwaben*, p. 22, "*Kunrad.*—Aus kaiserlicher" to "ein Gedoppeltes."

Where is Swabia? Why had Ernst been deprived of his duchy?

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Write a short account of Schiller's life, and enumerate his principal works.

2. Give some account of *The Robbers*, and explain, if possible, its great popularity.

3. Translate:

> Der Noth gehorchend, nicht dem eignen Trieb,
> Tret' ich, ihr greisen Häupter dieser Stadt,
> Heraus zu euch, aus den verschwiegenen
> Gemächern meines Frauensaals, das Antlitz
> Vor euren Männerblicken zu entschleiern.
> Denn es geziemt der Wittwe, die den Gatten
> Verloren, ihres Lebens Licht und Ruhm,
> Die schwarz umflorte Nachtgestalt dem Aug.
> Der Welt in stillen Mauern zu verbergen;
> Doch unerbittlich allgewaltig treibt
> Des Augenblicks Gebieterstimme mich
> An das entwohnte Licht der Welt hervor.
>
> SCHILLER, *Braut von Messina.*

Shew how Schiller followed a Greek model in writing this play. Do you consider that he was successful?

4. What are the historical events with which the trilogy of Wallenstein deals? What is the subject of the first part, and its connexion with the rest?

5. Name the prepositions that govern both the dative and accusative, and write sentences to shew how they are used.

6. Translate:

I am looking forward to seeing you.

I am very glad of it.

I remember him well. He goes to school.

The translation of the Old and New Testament by Luther is more renowned for the purity of its German idiom than for its adherence to the original text. Simon has charged him with ignorance of Hebrew, and when we consider how late he came to the study of either that or the Greek language and the multiplicity of his employments, it may be believed that his knowledge of them was far from extensive.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Explain the terms: numerator, denominator, fraction, integer, proper fraction, improper fraction, mixed number.

2. Reduce to improper fractions, $4\frac{13}{17}$, $5\frac{12}{15}$, $63\frac{7}{12}$, and to whole or mixed numbers, $\frac{853}{11}$, $\frac{471}{35}$, $\frac{869}{27}$.

3. Arrange in ascending order of magnitude:

(i) $\frac{4}{11}$, $\frac{2}{3}$, $\frac{3}{5}$, $\frac{9}{13}$.

(ii) $\frac{27}{85}$, $\frac{35}{47}$, $\frac{69}{118}$, $\frac{712}{765}$.

4. Find the sum of $\frac{5}{16}$, $\frac{13}{15}$, $\frac{17}{21}$, $\frac{10}{84}$, also the difference between $\frac{346}{1243}$ and $\frac{7995}{19998}$.

5. Simplify: (i) $(4\frac{7}{11} + 3\frac{5}{7}) \div 3\frac{2}{25}$.

(ii) $\dfrac{2\frac{3}{4} - 1\frac{2}{9}}{\frac{19}{36} + \frac{3}{2} \text{ of } \frac{1}{4}} \div 1\frac{9}{13}$.

6. Find in two ways the value of $\frac{7}{8}$ of £98 12*s.* $2\frac{1}{2}$*d.*, also of $\frac{11}{16}$ of 17 cwt. 2 qrs. 22 lb. 15 oz.

7. Add together: 36·275, 4·12935, 65·3, 718·005, 69·4725.

8. If a man travel 540 miles in 24 days, walking 6 hours a day, how many miles will he travel in 3 days walking 8 hours a day?

9. Find (i) by decimals, (ii) by practice, the cost of 4 tns. 4 cwt. 1 qr. 7 lb. at £43 12*s.* 6*d.* per ton.

10. How many dice, $\frac{1}{3}$ inch long, can be packed in a cubical box, $1\frac{1}{2}$ feet long inside?

11. If I begin with £768 9*s.* 9*d.*, and spend each month $\frac{1}{3}$ of what I have at the beginning of that month, what will be left me after 6 months?

12. Find the cube root of 40353607 and of $\frac{5}{6}$ correct to four places.

13. I invested £2460 in the 3 per cents. at $90\frac{3}{8}$ with $\frac{1}{8}$ per cent. brokerage; on their falling to $87\frac{1}{2}$ I sold out, paying again $\frac{1}{8}$ brokerage, and put my money on a mortgage at $4\frac{1}{2}$ per cent. Find the alteration in my capital and in my income.

14. Find the sum of $2\frac{3}{11}$ of 4*s.* 7*d.*, $\cdot\dot{2}\dot{3}$ of 7*s.* 6*d.*, and $\cdot 01$ of $1\frac{1}{8}$ of 1*s.* 8*d.* What fraction of this sum is £$\cdot$0025?

15. Find the discount on £539 10*s.*, due 10 months hence, at $4\frac{1}{2}$ per cent.

16. The compound interest on a sum of money 3 years at 5 per cent. is £331 0*s.* 3*d.* What is the simple interest?

ANSWERS TO *JANUARY* PAPER.

1. £16908 5*s.* $7\frac{1}{3}$*d.* 2. £10 12*s.* $2\frac{11}{144}$*d.*

3. 1, 2, 4, 8, 59, 118, 236, 472; 1, 2, 3, 4, 8, 12, 103, 206, 309; 6, 18, 1236; 1, 2, 4, 7, 28.

4. 2000 dollars. 6. $\frac{78}{1008}$; $\frac{108}{6475}$. 7. £22 16*s.* $10\frac{5}{8}$*d.* 8. $\frac{7}{8}$.

9. £1 8*s.* $9\frac{837}{800}$*d.* 10. 9*s.* $3\frac{8834}{10075}$*d.* 11. $13\frac{1}{23}$ mths.

12. $83\frac{3}{4}$*d.* Flemish per milree. 13. £111 15*s.* $8\frac{1}{3}$*d.* 14. $\frac{3}{5}$, $\frac{3}{5}$.

15. 6 hrs. 33 min. 45 sec. 16. $1\frac{1}{8}$ per cent.

Geometry.

Junior, Senior, and Higher Local,

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Define the term, angle. Name all the different kinds of angles, and define them.

2. Classify triangles in two different ways, explaining each term you use.

3. On a given straight line describe a scalene triangle, having its other sides equal to two given straight lines.

4. If two triangles have two sides of the one equal to two sides of the other, each to each, and have likewise the angles contained by those sides equal, they are equal in every respect.

5. If, at a point in a straight line, two other straight lines upon opposite sides of it, make the adjacent angles together equal to two right angles, these two straight lines are in one and the same straight line.

6. If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles.

7. The greater side of every triangle is opposite to the greater angle.

8. Place a straight line of given length between two given straight lines which meet so that it shall be equally inclined to each.

9. If a parallelogram and a triangle be upon the same base and between the same parallels, the parallelogram is double of the triangle.

The straight line joining the points of bisection of two sides of a triangle, is parallel to the base.

10. Divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts may equal the square on the other part.

11. If a straight line drawn through the centre of a circle bisect a straight line in it which does not pass through the centre, it shall cut it at right angles.

The straight line joining the centres of two intersecting circles, bisects at right angles their common chord.

12. To inscribe a circle in a given square.

The perpendiculars let fall on the sides of an equilateral triangle from the centre of the circle described about the triangle, are equal.

13. Explain the term, similar rectilinear figures. What conditions are requisite for triangles to be similar, and for rectilinear figures of more than three sides to be equal?

14. Triangles and parallelograms of the same altitude are one to the other as their bases.

Triangles and parallelograms upon equal bases are one to another as their altitudes.

15. The sides about the equal angles of equiangular triangles are proportionals; and those which are opposite to the equal angles are homologous sides, that is, are the antecedents or consequents of the ratios.

16. If two diagonals of a regular pentagon be drawn to cut one another, the greater segments will be equal to the side of the pentagon, and the diagonals will cut one another in extreme and mean ratio.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—14 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Find the numerical value of (i) $a^b+b^c+c^d+e^f$, and (ii) $(a+b+c+d)\ (a+b-c-d)\ (a-c+b-d)\ (a-b+c-d)$ when $a=1,\ b=3,\ c=2,\ d=5,\ e=4,\ f=6$.

2. Multiply $x^7+6x^5y+24x^3y^3+72xy^5+y^7$ by x^2-y^2; and divide $x^4+7x^3y+14x^2y^2+7xy^3+y^4$ by $x^2+3xy+y^2$.

3. Find the value of:

(i) $\dfrac{x^2+4y^2}{x-y}+\dfrac{3x^2y^2-x^2}{x^2-y^2}-\dfrac{9\,(x^4-y^4)+x^5}{x^4-y^4}$;

(ii) $\dfrac{x^2+y^2}{(x+y)^2}+\dfrac{(x-y)^2}{x^2-y^2}+\dfrac{x^2-y^2}{(x-y)^2}$.

4. Simplify:

(i) $\dfrac{a+b}{\dfrac{c+f}{\dfrac{d+g}{e}}}$.

(ii) $\dfrac{a+b}{c+d}+\dfrac{c-d}{a-b}+\dfrac{e-f}{e+f}+\dfrac{e+f}{a+b}$.

5. Shew how to find the L.C.M. of two or more algebraical expressions. Find the L.C.M. of

$$x^4-y^4,\ (x+y)^2 \text{ and } x^3+2x^2y-2xy^2-y^3.$$

6. Divide a line 36 inches long into two parts, so that one may be one-third of the other.

7. Solve the equations:

(i) $\dfrac{x+10}{3}-\dfrac{3x+6}{7}=\dfrac{x+5}{5}$;

(ii) $(x+5)\,(x+3)+x^2+4x+3=3\,(x^2+2x-3)$;

(iii) $(x+5)\,(x+21)+(x+3)\,(x+2)=71\,(x-1)$.

8. Find two numbers such that the first increased by 4 is equal to twice the second number increased by 1; and if 3 be taken from the second number it then is equal to the first number diminished by 10.

9. Solve the equations:

(i) $\sqrt{(x^2+15)}+\sqrt{2(x^2+1)}=\sqrt{7x^2-19}$;

(ii) $x^2+12x-6+\sqrt{x^2+12x+3}=16$.

10. Find the square root of

$$x^6+4x^5y+8x^4y^2+10x^3y^3+8x^2y^4+4xy^5+y^6.$$

11. Shew how to sum a series of numbers in arithmetical progression. Sum $\frac{5}{7}+\frac{5}{9}+\frac{5}{11}+\ldots$ to infinity.

12. The sum of £12400 was divided among 5 persons, whose shares were in A.P. The sum of the fifth and second shares was three times the difference between the fourth and second shares. Find the respective shares.

13. If A vary as B, then A is equal to B multiplied by some constant quantity.

If x vary as y and $x=3$ when $y=7$, find the value of y when $x=21$.

14. Prove that a quadratic equation cannot have more than two roots. Form the equation whose roots are $\alpha^2-\beta^2$ and $\frac{\alpha+\beta}{\alpha-\beta}$.

15. Prove the Binomial Theorem for a positive integral exponent. Write down the third term of $(x+3y)^7$, and the middle term of $(2x+5y)^{11}$.

16. A walks as many miles in an hour as B works days in a week. If B worked two hours less in the week, then the number of hours he works in a week is equal to the number of miles A walks increased by 34. If A walked one mile more in an hour, then the number of miles he walks in an hour is equal to half the number of hours in a day that B worked at first.

ANSWERS TO *JANUARY* PAPER.

2. 81; 107.

4. $x^6+4x^5y+5x^4y^2-5x^2y^4-4xy^5-y^6$; $x^2+6xy-y^2$, rem. $3xy^3+3xy^5+y^4+y^6$.

5. (i) $(x-12)(x+12)$; (ii) $(x-10)(x-12)$; (iii) $(x-13)(x+1)$; (iv) $(x-3)(x+3)(x+9)$. 6. $3x^4+4x^3-6x^2-12x-5$.

7. (i) $x=4$; (ii) $x=-\frac{1}{5}$; (iii) $x=5$, $y=4$; (iv) $x=3$ or -4, $y=4$ or -3.

8. (i) $x=4$ or $\frac{49}{37}$; (ii) $x=5$ or -2.

9. $a^{\frac{1}{4}}+a^{\frac{1}{2}}(b^{\frac{3}{4}}-4b^{\frac{1}{8}}-b^{\frac{7}{8}})-2a^{\frac{1}{4}}(b^{1\frac{1}{4}}+b^{\frac{3}{2}\frac{7}{4}})-b^{1\frac{3}{8}}$;

$$xy^{\frac{1}{2}}+4(x^{\frac{7}{8}}y^2+x^{\frac{5}{4}}y^{1\frac{3}{4}}+4x^{1\frac{1}{2}}y^{1\frac{9}{4}}+2x^{2\frac{1}{2}}y^3-2x^2y^{\frac{2}{4}}-x^{\frac{8}{8}}).$$

10. 16 and 72. 12. 40 and 24. 13. $2+4+6+8+\ldots$

14. $\frac{4}{8}\frac{(4^9-1)}{8}$. 16. 20130035113.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Prove that $\sin^2 A + \cos^2 A = 1$, and $\sec^2 A = 1 + \tan^2 A$.

2. Find A and B from the two equations:

$$\sin(A+B) = 1; \tan(A-B) = \frac{1}{\sqrt{3}}.$$

3. Find $\sin A$, having given $\tan \frac{A}{2} = 2 - \sqrt{3}$.

4. Prove that in any triangle $a = c\cos B + b\cos C$. From this and the two similar equations deduce the equation

$$c^2 = a^2 + b^2 - 2ab\cos C.$$

5. Find all the values of θ which satisfy the equation

$$\tan^2\theta = \tan(\alpha+\beta).$$

6. Explain what is meant by compounding and resolving velocities.

7. Define the limiting angle of friction. An inkstand resting upon a table and pressed upon by a certain force begins to move. In what direction must the force have been applied? and how can you reconcile this motion with the theory that action and reaction are equal and opposite?

8. Describe the different systems of measuring force. What is a foot-poundal?

9. A balloon is ascending vertically with a velocity of 100 ft. per second, and a stone let fall from it reaches the ground in 5 seconds. Find the height of the balloon when the stone strikes the ground.

10. A body falls down an inclined plane 42 ft. long, whose inclination is 60°. Find the velocity at the bottom of the plane.

11. A body has described 45 ft. from rest in 3 seconds. Find the time it will take to move over the next 135 ft.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. Enunciate and comment upon the first law of motion.

2. Find the conditions of equilibrium of a heavy rod of mass m which is suspended by two strings of lengths l and l' attached to its end and attached to the same fixed point.

3. Assuming the parallelogram of forces for the magnitude of the resultant, prove it for the direction of the resultant.

4. Shew how to find practically the coefficient of friction between two substances.

5. "The path of a projectile in space is a parabola."

A body is projected with a velocity of 12 ft. per second at an inclination of 45°. Find the greatest height to which it will rise and the horizontal range.

6. A body descends uniformly down a plane 12 ft. long inclined at an angle of 30° to the horizon in 9 seconds. Find the vertical velocity.

7. Define energy, and name the different kinds of energy. What kind of energy is that possessed by compressed air? Give reasons for your answer.

8. If one foot be the unit of length and one second the unit of time, what is the measure of the velocity of light which requires 8 minutes to pass from the sun to the earth, taking that distance to be 91,000,000 miles?

9. Discuss the nature of comets and the formation of tails on their approach to the sun, and account for the fact that these tails always point away from the sun.

10. Define parallax, and shew how the sun's parallax may be found accurately by observations of the transit of Venus.

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. The sides of a plane triangle are 12 ft., 13 ft., and 14 ft. respectively. Find the area of the triangle.

2. Find an expression for all the angles which have a given tangent. Write down the general value of θ when $\tan^2\theta = 3$.

3. Find the radius of a circle inscribed in a triangle. The sides of a plane triangle are 4, 9, 12. Compare the radii of the inscribed and circumscribed circles.

4. Find an expression for the sine of the sum of two angles in terms of the sines and cosines of the angles themselves.

5. Determine the value of the trigonometrical ratios of an angle of 435°.

6. Find the circular measure of an angle of 15° 33′ 25″.

7. Trace the form of the parabola from its equation $y^2 = 4ax$.

8. Find the equation to the common tangent of the circles $x^2 + y^2 = (c+a)^2$ and $x^2 + y^2 - 2ax = (c+a)(c-a)$.

9. Find the co-ordinates of the intersection of
$x\cos\alpha + y\sin\alpha - p = 0$ and $x\cos\beta + y\sin\beta - p = 0$.

10. The sum of the distances of any point from the foci of an ellipse will be less or greater than the major axis according as the point is inside or outside the ellipse.

11. The tangent to a parabola at the vertex is perpendicular to the axis.

12. If from any point P of an hyperbola PH, and PK be drawn parallel to the asymptotes, meeting them in H and K respectively, then $4PH.PK = CS^2$.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). ***Senior Students will only be examined in*** (*a*), (*b*), ***and one of the subjects*** (*c*), (*d*), (*e*).

(*a*)

1. Does oxygen occur free in nature? What volume will 200 grammes of oxygen occupy? How much of it by weight can you obtain from 500 grammes of potassic chlorate?

2. What are the chief properties of hydrogen? When it burns in the air what is formed?

3. How much oxygen and hydrogen do 200 cubic centimetres of water give if completely decomposed?

(*b*)

4. By means of what metals can you decompose water and obtain free hydrogen? Describe the process.

5. Describe the preparation of nitrogen (i) from air, (ii) from ammonia.

(*c*)

6. Explain the term, force. What forces are acting upon a book lying on a table, a piece of iron in the neighbourhood of a magnet, a ball falling from a height, a ball bounding after touching the earth?

7. State the theorem of the parallelogram of forces. Prove the same theoretically, or describe an experiment by which it may be practically proved.

8. Explain why a force, acting upon a rigid body at rest, may be supposed to act at any point within the body in the line of its direction.

9. Distinguish between solids, liquids, and gases. Describe the experiment by which the compressibility of liquids has been proved.

10. What conditions must be fulfilled before a liquid can be in equilibrium? Describe the hydraulic press, and note the principle of which it is the practical application.

(*d*)

11. State the theories as to the cause of heat known as the "Theory of Emission" and the "Theory of Undulation."

12. Suggest any reason why bodies expand under the action of heat. Which substances are the most expansible? Describe a method of measuring the expansions of solids.

13. Account for a small space being left between successive rails in laying down a railway, also for a glass into which hot liquid is suddenly poured cracking.

(*e*)

14. Distinguish between frictional and current electricity, in the manner in which they are obtained, and the practical uses to which they may be put.

15. Account for each fraction of a broken magnet being a perfect magnet. Shew by a diagram the hypothesis of the two-fluid theory.

16. Describe a Wollaston voltaic cell. Explain the polarization of a cell, its disadvantages, and the method by which Daniell, to a great extent, overcame them in the construction of his cell.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Describe a moss.

2. Compare the spore-bearing organs of the fern, horsetail, and stag's-horn moss.

3. Give an account of the development of selaginella. How does it differ from that of a fern?

4. What is the minute structure of the stem of the horse-tail and the bracken?

(*b*)

1. Describe a hydra and a sea-anemone, drawing diagrams shewing the difference of structure between the two.

2. What is a thread-cell? How do sense organs occur in the cœlenterata?

3. Explain the meaning of a "polypite" and a "cœnosarc," giving descriptions of examples (including a common jelly-fish) shewing the different forms in which they may be arranged.

4. What are "dead-men's fingers"? Describe the chief forms of cœlenterata which build coral islands.

(*c*)

1. Explain why more rain falls in the west of England than in the east.

2. Where does the moisture which forms the dew come from? Why is there little or none on cloudy nights? and why is it deposited in greater quantity on grass than on gravel?

3. Name three kinds of rock that have been formed by the action of heat and three that have been formed in water. Describe the formation of rocks in water.

4. What is meant by the term, denudation? Give an example of one form of denudation.

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. Define the terms, acid, base, and salt, illustrating your reply by three examples of each. How is a salt formed?

2. Explain the theory of atomicity, or quantivalence, with examples.

3. Describe shortly the hypotheses to explain the origin of light known as the emission theory and the undulatory theory.

4. Explain the terms, reflection, refraction, angle of incidence, angle of reflection, angle of refraction, ray of light, pencil of light. Quote the laws of the reflection of light.

5. Explain the term, heredity. Note its extent and limits. Give a few instances of its action to a remarkable extent on plants, the lower animals, and man.

6. Give the zoological classifications of Linnæus and Cuvier, stating the principles upon which each is made and the defects of the same. Give any other classification you may know.

(*b*)

1. What is molecular weight, and to what standard is it referred? How may it be determined?

2. Give an account of ozone. Describe two methods by which it may be prepared, and a test for its presence.

3. How is ammonia prepared and collected? In what way may it be decomposed? and how many cubic centimetres of nitrogen and hydrogen could you obtain from 20 cc. of it?

4. What is the effect of heat on the nitrates? Give the composition of nitre and of gunpowder. What takes place when gunpowder is burnt?

(*c*)

1. Describe any experiments for measuring the velocity of light. What is that velocity ascertained to be?

2. The focal length of a convex mirror is eight inches. What is the position of the image of a small object twelve inches from the mirror?

3. At what distance from a circle with a diameter of one foot is the visual angle a second?

4. If the radius of the spherical surface of a plano-concave lens be six inches, what must be the refractive index of the material of the lens, in order that its focal length may be ten inches?

(*d*)

1. What elements are necessary to support the vigorous life of a plant? How are they known to be so? From what sources are they obtained?

2. Give an account of the circulation of gases in plants.

3. Plants obtain their food in a diffusible state. Is there any reason for supposing that this fact has influenced their power of motion?

4. How does light affect the formation of starch? Explain Pringsheim's view of the part taken by chlorophyll in its formation.

(*e*)

1. Give a definition of mollusca, and a brief classification of the sub-kingdom. Describe the respiration and circulation distinctive of the group, and state what marked points separate molluscs from the animal kingdoms below them.

2. Describe minutely the anatomy of a snail, with special reference to the reproductive organs. What is the meaning of "postho-branchial" and "epistho-branchial"?

3. Give a detailed account of the odontophore in gasteropoda or cephalopoda, and of the cephalic eye, stating where it differs from the vertebrate.

4. Contrast a brachiopod and a lamellibranch. What characteristics ally them to worms?

(*f*)

1. What do you understand metabolism to mean? What is glycogen, and where is it found? Give the evidence for and against the view that glycogen is reserve carbo-hydrate material.

2. By what means is the normal body temperature maintained? What is the source of energy in the animal body, and how is it set free?

3. What part does nitrogen play in animal nutrition? What constituents are necessary for a healthy animal diet?

4. Draw a diagram shewing the minute structure of the skin and the position of sweat glands. Describe the spleen, and compare it with a lymphatic gland.

(*g*)

1. Describe the structure of a volcano with a diagram, and explain the cause of the cone-like form of most volcanoes.

2. Compare water in its solid and liquid state as an agent of denudation.

3. Give a list of the beds which form the tertiary deposits in England, mentioning the localities in which they are found.

4. What forms of life make their first appearance in tertiary beds? What are the lithological characters of these beds?

Logic.

Higher Local.

1. Compare the two following arguments in respect of their right to be considered true inductions:

(i) England was once inhabited by Celts: this is also true of Scotland, Ireland, and Wales, therefore the British Isles were once inhabited by Celts.

(ii) All the negroes whom I have seen, or of whom I have read, have dark skins; and the experience of all other persons agrees on this subject with my own: therefore I may conclude that all negroes have dark skins.

2. Explain clearly what is meant by "colligation of facts," and give an account of the controversy between Mill and Whewell as to the relation between colligation and induction.

3. Mill says that "the uniformity of the course of nature is the ultimate major premise in all cases of induction." Explain what is meant by this, and illustrate your explanation by an example.

Define induction per "Enumerationem Simplicem," and shew in what cases this may be considered a valid process of induction.

4. Define the terms: law of nature, antecedent, consequent, cause, counteracting cause, preventing cause, permanent cause, condition.

5. What is the "Law of Universal Causation"? Distinguish between efficient and physical cause.

6. Discuss the supposed axiom, that effects are proportional to their causes, and give such examples as will shew at what point the theory fails to be true.

7. Name some of the main differences between sciences of observation and those of experiment. How is it true that the methods of those sciences in which artificial experiment is impossible or very limited must be chiefly deductive?

8. Write an essay upon "Bacon as the Founder of the Inductive Philosophy."

Constitutional History.

SPECIAL PERIOD, 1259—1307.

Higher Local.

1. Enumerate the chief legislative enactments of Edward I. Give their main provisions.

"A comparison of the legislation of Edward I. with that of Henry II. brings out conclusively the fact that the permanent principles of the two were the same." Illustrate this statement.

2. Trace the events which led to the Confirmation of the Charters, 1297.

3. Give an account of the circumstances which placed the Lancastrian family on the throne. Estimate the constitutional importance of this dynastic change.

4. Write a brief life of Wycliffe. Examine the political views of the Lollards.

5. "The founder of the New Monarchy was Edward IV."—GREEN. Examine this view.

Political Economy.

Higher Local.

1. Discuss the question of bi-metallism. What are the chief requisites of a good currency?

2. "Political Economy cannot assist statesmen to settle the Irish difficulty." Comment on this, and give your own opinion.

3. Compare direct and indirect taxation. Consider the question from a political and moral standpoint, as well as from an economic one.

4. Distinguish between imperial and local taxation. If extra taxation is necessary, do you consider it advisable that it should be imperial or local? Give reasons for your answer. Mention and comment on any facts which you may know concerning the increase or decrease, within the last few years, of these two kinds of taxation.

5. What have been the commercial results to Europe of the discovery of America? Can your predict any probable future results?

6. Senior Paper, No. 7.

7. Senior Paper, No. 3.

8. Senior Paper, No. 4.

9. Senior Paper, No. 6.

10. Write an essay, not exceeding three pages, on any economic question.

Political Economy.

Senior.

1. What are the advantages to be gained by studying the science of Political Economy? Answer some of the objections which have been brought against the study of that science.

2. Explain the errors of the Mercantile system. Shew the connexion between that system and Protection.

3. What differences do we find in farming as carried on in the following countries? England, France, Australia, Italy, and India. How would you explain these differences?

4. If you were told that two men in different places, and in different employments, were receiving equal wages, what question would you ask before you could decide whether both were equally well paid or not?

5. "The word *rent*, as used by an ordinary English farmer, does not mean the same as *rent* used by an economist, and even in economics we have two kinds of rent." Explain this as fully as possible.

6. What is the advantage of paying ready money? Do you think it is always advisable to pay ready money? Give reasons for your opinion.

7. What difficulties might arise by using the following terms without defining their meaning? value, wages, wealth, rent.

Music.

Junior and Senior.

1. What clef is used in music besides the G and F clefs, and upon what staves is it employed?

2. What note on the pianoforte is represented by each of the three clefs?

3. Shew how all the five-line staves used in music form part of one great stave of eleven lines, and what are the positions on that stave of the three clefs?

4. What are leger lines, and when are they used?

5. Write the treble part of any well-known hymn tune two octaves lower on the bass stave, and the bass part two octaves higher on the treble stave. (Give the name of the tune.)

6. Shew in how many ways the sound of a note may be altered while its name and position on the stave remain unchanged, and say in what the alteration consists in each case.

7. What are accidentals, and what are the rules connected with them?

8. What are time signatures and key signatures?

9. Say what signs you would would use to express severally: 3 crochets in a bar, 4 minims in a bar, and 6 quavers in a bar, and explain fully your reasons in each case.

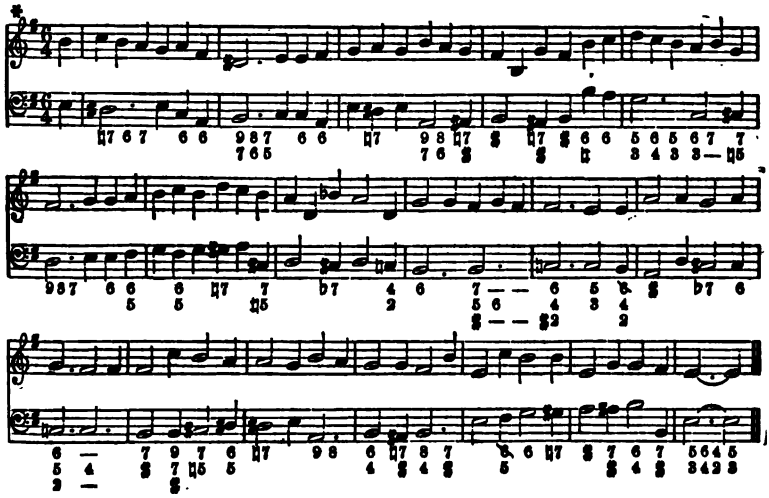
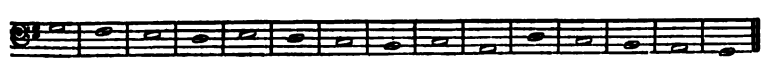
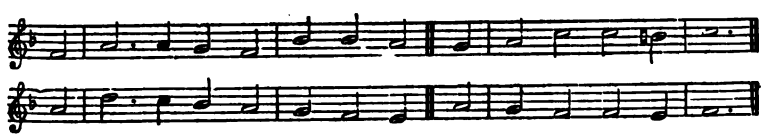
10. What is the use of bars, and when should a double bar be used?

11. Bar the following passage, and afterwards re-write it, substituting notes for rests, and rests for notes, always using those of the same value:

12. What is the sign used in music for a pause, and what do *da capo* and *dal segno* mean?

Music.

Higher Local.

1. Add alto and tenor parts to the following, and write the ground-notes on a third stave below the bass stave:

2. Write four exercises of counterpoint of the first species in four parts to the following subject, placing it in each part alternately. Write in score and figure the bass. (The *canto fermo* may be transposed in order to suit the compass of the part in which it is placed.)

3. Add three parts (alto, tenor, and bass) to the following hymn tune, and figure the bass:

For Candidates for Classes I. and II. only.

4. (i) What is sound?

(ii) How do matter and motion assist in the production of sound? Illustrate your answer from facts of common occurrence.

(iii) Give a minute explanation of wave-motion, and quote as many examples of it as have come under your own observation, saying which are due to transverse and which to longitudinal vibrations.

* From Stainer's *Treatise on Harmony*, by permission of Messrs. Novello & Co.

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Work of Pestalozzi.*

1. "From one point of view education can do much, from another it can do little or nothing." Discuss this statement, shewing what are the limitations under which the work of teaching must be carried on, and what should be the practical bearing of these facts on educational work.

2. How would you try to carry out the distinction indicated in the following passage in the management of a school? "Morality is something so holy and elevated that we must not throw it away and place it in the same rank with discipline."

3. What are the chief features of the humanistic, the realistic, and the naturalistic schools of educational theory? Who are the educators specially connected with each school?

4. In what respects did the principle of mutual instruction adopted by Pestalozzi differ from the monitorial system of Bell and Lancaster?

5. What threefold aim had Pestalozzi in view in his lessons on objects? Give some account of his principal writings on Education. What did he mean by saying that education should be based on intuition?

6. What are the advantages of the plan of simultaneous repetition? In what way is it liable to abuse?

7. Expand and illustrate the idea contained in the following passage from the methods carried out by Pestalozzi with his pupils: "What the plant is to botanical science and the experiment to chemical science, that an action is to morals."

8. Draw up the plan of a lesson on the construction of some simple machine, such as a hinge, a lock, or a pump, for a class of children from nine to eleven years of age.

Remarks and Comments on January Answers.

As the papers sent in to us this month include those of several Junior and Senior students, who, beginning the course for the December Examination, are new to our Correspondence Class, we must give more space than we usually spare to suggestions about the work for that Examination.

In Religious Knowledge we find that while some students are beginning all the sections (*a*), (*b*), (*c*), (*d*), (*e*), others are only attempting one or two,—intending, we suppose, to take up others later. Although for the convenience of schools, and of such as prefer to begin all the subjects at once, we give questions through the year on every portion of the work to be examined in, we do not wish it to be considered our intention that all should do so, nor that we hold such a course the wisest and best. We do not feel at liberty to lay down any rules upon the subject, but can only suggest that it is as well not to work at the same time at more than one book of the Old Testament, one of the New, and either the Prayer Book or Paley. In the plan on which the questions for the year are drawn up, it is expressly arranged that there will constantly be questions on the early work, so that students beginning a subject late in the year need not fear that we shall leave their knowledge untested, or themselves without the assistance of correction and comment on answers to questions similar to those given in the early part of the year's course.

In History, the largest proportions of questions in (*a*) will each month be on that portion of the Special Period which would naturally be being studied by students who divided the Period into nine portions, one to be studied every month. The General Questions will go straight through English History from the coming of the English, omitting the Special Period provided for in (*a*).

In Geography, the maps are unsatisfactory. Unless we particularly ask for them, we do not wish political divisions, the boundaries of counties, or the course of canals traced. We should be glad to be able to distinguish at a glance between mountains and rivers, and to read the names of the few towns which we ask to have inserted.

We must defer remarks on the Literature till next month. With the English Grammar we are far from satisfied; the subject is a difficult one, but is worthy of careful study. The parsing and analysis are in many cases weak, and the latter is in a few instances ill-arranged. A neat scheme for the arrangement of analysis is given in most good Grammars.

As the French papers appear to be the most popular of those on Language we shall confine our remarks to them the more readily, as in many cases they will apply equally well to those on Latin and German. The translation from English into French (page 19, No. 6, and page 20, No. 7) is so important that we regret to find it often omitted, and hope students will in future omit one of the passages for translation from French to English, if omission be necessary, in preference.

Higher Local students are advised not to avoid the questions on Literature (page 21, Nos. 1, 2, 5), as on an average half of the examination paper consists of such questions. They are also reminded that it would be well to attempt the passages for translation, as they are given each month from one author with whom it is desirable they should have some acquaintance. We must also mention that we should like to see the translation more faithful but less literal. Great care should be taken with idioms, the knowledge of which appears to be at a low ebb.

The Junior and Senior Arithmetic papers do not give us as much satisfaction as do those of the Higher Local students, which are, with few exceptions, carefully arranged, and neatly and accurately worked. We wish all working shewn; such as need not appear in the statement of the sums should be given in a margin on the right hand of the page. The answer should always be written out apart from the sum below the end of the working. In giving the factors of 472 and 1236 (page 25, No. 3), we note that 1 and 472, also 1 and 1236, are in several cases omitted, though according to the definition of a factor they should not be.

Our Junior Geometry paper is, we consider, relatively more easy than any of the other junior papers. We are therefore surprised and disappointed to find it indifferently and only partially answered.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

(*a*)

1. What facts are mentioned about Naaman when he is introduced into the Scripture narrative? Give the approximate value of the ten talents. Give the situation and modern names of Abana and Pharpar.

2. What allusions to Eastern manners and customs do you find in Chapters v. vi. and vii.? On what occasions were the following words used?

(i) "Lord, I pray thee open his eyes."
(ii) "Is not the sound of his master's feet behind him?"
(iii) "Shall I smite them, my father, shall I smite them?"

3. Senior Paper, No. 1.

(*b*)

4. Who are meant by the strong man, his house, his conqueror, in Chapter iii.?

5. Explain the Jewish proverbial expression, "small as a grain of mustard seed."

6. What natural objects, probably seen by Christ while speaking, would be likely to suggest the similes used in the parable of the Sower?

7. Senior Paper, No. 5.

(*c*)

8. Explain the passage, "beholding as in a glass," &c. What different rendering may be given to it which makes the verse more intelligible?

9. Quote some of the similes used in Chapter iii., and state what they stand for in the passages in which they are used.

10. Explain the allusions in the following passages: (i) "a second benefit"; (ii) "and more abundantly to you-wards"; (iii) "do I purpose according to the flesh."

(*d*)

11. Analyse the Lord's Prayer, arranging it under four heads. What may the word *kingdom* be understood to refer to in this prayer?

12. What is the derivation and literal meaning of the word *Sacrament*? What are the essentials of a Sacrament?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

(*a*)

1. What trace have we in the narrative in Chapter v. of the notion that gods belonged to particular territories?

2. The words "Go in peace" may be regarded as the usual form of leave-taking, or as having reference to the preceding question. Which view would you support?

3. Who was probably the king referred to in Chapter vi. 8? On what two occasions did Elisha incur royal displeasure? Explain the allusion, "this son of a murderer." What explanation is given by many writers of Chapter vi. 25?

(*b*)

4. Give the various interpretations of the word *Beelzebub*. Account for the various readings of the following name in the three Synoptic Gospels: (i) Gadarenes, (ii) Gergesenes, (iii) Gerasenes.

5. In what different senses are the words *parable* and *mystery* used in the New Testament? Give references to illustrate your answer.

6. What various opinions are there about the *brethren* of Christ? Give their names from one of the other Evangelists.

(*c*)

7. What is meant by the phrase "new testament," Chapter iii. 6? Paraphrase the passage in which it occurs.

8. State, in your own words, the argument contained in Chapter iii. 7—18.

(*d*)

9. Note the principal differences between the first Prayer Book of Edward VI. and that now in use, (i) in the Order of Morning and Evening Prayer; (ii) in the Communion Office; (iii) in the Baptismal Office. What objects had the compilers of the present Prayer Book chiefly in view?

10. "To judge both the quick and the dead." Quote passages of Scripture in confirmation of this article.

11. What is Confirmation? Give Scriptural authority for it. Why is this rite administered, and under what conditions?

(*e*)

12. Give illustrations of St. Paul's habit of digression, on the occurrence of some particular word, from the Epistle to the Ephesians.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS XLII.—LXXII. II. NEW TESTAMENT: ST. LUKE; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) HOOKER'S ECCLES. POL. V. 50—68; (*b*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.

I.

1. Briefly describe the two great parties which divided Jerusalem immediately before the Captivity. From what causes did Jeremiah incur the hatred of both?

2. Write brief notes on the parts taken by the following persons: Baruch, Jehudi, Hananiah, Ebed-Melech, and Gedaliah.

3. Shew, by a table, the descent of the kings of Judah from Josiah to Zedekiah. Give dates, and the names of contemporary prophets.

4. In what connexion are the following places mentioned in the book of Jeremiah? Carchemish, Anathoth, Gibeon, Lachish, Azekah, Riblah, Shiloh, Tahpenes, and Mizpeh. By means of an outline map shew their probable position.

5. Describe and illustrate the peculiar position of Jeremiah in the prophetic line of the kingdom of Judah.

6. Explain the following passages:

(i) "Can the Ethiopian change his skin, or the leopard his spots?"

(ii) "They shall say no more, The Ark of the Covenant of the Lord."

(iii) "He hath violently taken away his tabernacle, as if it were of a garden."

II.

7. What may be learned from Holy Scripture of the life of St. Luke?

For whom, and at what date was this gospel probably written?

8. Compare carefully the parable of the Sower as given by St. Matthew and St. Luke. Contrast the parables of the Pounds and the Talents, and illustrate the chief points of difference between St. Luke and the other Synoptists.

9. What evidence may be gathered from the preface to St. Luke's Gospel as to the nature of the unwritten Gospel of the first age?

10. Write brief notes on the following passages:
(i) "Physician, heal thyself."
(ii) "We have seen strange things to-day."
(iii) "I beheld Satan as lightning fallen from heaven."

11. Write, from memory, a table of the family of the Herods mentioned in the Gospels and the Acts of the Apostles.

III. (*a*)

12. At what date, and with what purpose was the *Ecclesiastical Polity* written? Why was Book V. published separately?

13. "Of both natures in Christ there is a co-operation often, an association always, but never any mutual participation." How does Hooker expand and explain this statement?

14. When, and for what reasons was Confirmation separated from Baptism?

15. On what grounds does Hooker uphold Infant Baptism? What is his opinion with regard to Baptism by women or laymen?

16. Explain, and give the context of the following passages:
(i) "Epiphanius striketh on the very self-same anvil as Tertullian."
(ii) "Nature, as much as is possible, inclineth unto validities and preservations."
(iii) "Till we come to actual belief, the very sacrament of faith is a shield as strong as after this the faith of the sacrament."

17. For what purposes does Hooker refer to the Burning Bush; the Brazen Serpent; Naaman; Zipporah; the gifts of Pentecost?

(*b*)

18. Make, from memory, an analysis of the plan proposed by Butler in the Introduction to the *Analogy*, and of the development of that part of the subject which is contained in Part II.

19. "The apprehension that religion *may* be true, does as really lay men under obligations, as a full conviction that it is true." Discuss this statement. How far do you consider such an argument likely to influence men's lives?

20. Prove that to deny that a prophecy may be fulfilled in a sense different to the sense of the prophet, is really to deny its inspiration.

21. What is, according to Butler, the exact connexion between natural and revealed religion?

22. "Probable proofs, by being added, not only increase the evidence but multiply it." Explain and illustrate this statement.

23. Reasoning from analogy of nature, what further development of truth may be expected?

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Why should Perkin Warbeck, when making an attack upon England from Scotland in 1497, have landed in Cornwall rather than in the north? Give a short account of his life from that time.

2. What causes led to a war with Scotland during the early part of the reign of Henry VIII.? Give the date, the leaders on both sides, and the results of the battle of Flodden.

3. Write a short sketch of the life of Cardinal Wolsey, and note particularly the causes of (i) his popularity with the king, (ii) his downfall.

4. What was the object of the meeting at the Field of the Cloth of Gold? Did it affect the foreign policy of England?

(*b*)

5. Describe the circumstances which led to the battle of the Standard. Give its date and result. What were the chief evils of Stephen's reign?

6. Senior Paper, No. 6.

7. Name any English princes who took part in the Crusades, giving a short account of those in which they engaged.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Enumerate the islands of Europe, and say to which countries they respectively belong.

2. Give the boundaries, rivers, and provinces of Belgium. Describe the physical features of that country, the main branches of industry pursued therein, the government, religion, and most marked characteristics of the inhabitants.

3. Senior Paper, No. 3.

4. Senior Paper, No. 4.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Shew that at the beginning of the reign of Henry VII. no estate of the Realm was in a position to limit the power of the Monarchy. Account for such being the case.

2. Shew the effect on England of the Duke of Albany being appointed Regent of Scotland.

3. Sketch briefly the life of Cardinal Wolsey. Describe, as fully as possible, his character. Account for his popularity with the king, his action with regard to the Church, his foreign policy, and his downfall.

4. What effect had the death of the Emperor Maximilian on the balance of power in Europe, and on the position of England as an independent power?

(*b*)

5. Give shortly the history of the civil war in Stephen's reign. What was the effect of that monarch's reign on the development of the country?

6. Indicate the causes of dispute between Henry II. and Becket. Give the conditions of the Constitutions of Clarendon.

7. Junior Paper, No. 7.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. France being divided into regions productive of corn, wine, and oil respectively, what would be the limits of each?

2. Junior Paper, No. 2.

3. Draw an outline map of Russia, giving the most important mountains, rivers, lakes, gulfs, and bays; also the following places: Moscow, St. Petersburgh, Orenburg, Odessa, Tiflis, Cronstadt, Balaklava, Vilna, Saratov, Pottava, Archangel, and Riga.

4. Name the States which bound the Sahara. Indicate any points of difference between the eastern and the western parts of the Desert.

English History.

Higher Local.

(*a*) GENERAL, 1625—88; (*b*) SPECIAL, 1576—1603.

(*a*)

1. Give an account (i) of the Petition of Rights, (ii) of Hampden's case.

2. Compare the "Propositions" of 1642 with the terms offered to Charles I. at Uxbridge, at Newcastle, at Hampton Court, and at Newport. By what parties were these various terms proposed? Indicate the position of King and Parliament at each of these epochs.

3. Examine (i) the foreign policy of Oliver Cromwell, (ii) his action with regard to religion.

4. Sketch the Popish Plot agitation.

5. Give an account of the trial of the Seven Bishops.

6. What were the Test Act, the Habeas Corpus Act, and the Dispensing Power?

(*b*)

7. Give an account of the general conspiracy against Elizabeth (1583).

8. What was the immediate cause of the execution of Mary, Queen of Scots? Narrate briefly the events of her trial and execution.

9. Trace the events which led to the Spanish invasion (1588). Give an account of that invasion.

10. Write a brief life of (i) Robert Cecil, (ii) Essex, (iii) Raleigh.

English Literature.

Junior.

KING RICHARD II.

1. "Richard was eloquent when dwelling on his own woes, but cold and pitiless towards the griefs of others." Illustrate the latter part of this statement by quoting passages from the play.

2. Reproduce in your own words the parting of Aumerle with Hereford. What were the means by which Richard proposed to raise the funds necessary for the war in Ireland?

3. Give instances of play upon words from Act II. Sc. i.

4. What evidence is indirectly given in the first act of Bolingbroke's intentions as regards the future?

5. Explain the following:

(i) "A thousand flatterers sit within thy crown,
Whose compass is no bigger than thy head."

(ii) "That blood already, like the pelican,
Hast thou tapp'd out and drunkenly caroused."

6. Paraphrase Act II. Sc. i. 31—68.

English Grammar.

1. When is the word *this* a demonstrative adjective, and when is it a demonstrative pronoun? Give examples.

2. What rules guide us in deciding between the use of the subjunctive or the indicative mood in any given case?

3. Give some instances of verbs used as nouns without any change of form.

4. Senior Paper, No. 4.

English Literature.

Senior.

KING RICHARD II.

1. What was the old English custom with respect to the use of double negatives? What is the Latin custom? When did the latter begin to affect the English language?

2. Explain and comment on the following words: glose, pelting, a-dying, verge, rug-headed, kern, broking pawn, perspectives, and expedience.

3. Give instances from this play of words used in a different sense to that in which they are now used.

4. By whom, of whom, and when were the following lines uttered?

(i) "The Commons hath he pill'd with grievous taxes."
(ii) "His time is spent, our pilgrimage must be."
(iii) "Each substance of a grief hath twenty shadows."
(iv) "He should have had a volume of farewells."

5. By what arguments does the Duke of York try to move the king in Act II. Sc. i.?

6. Paraphrase Act II. Sc. i. 172—186.

English Grammar.

1. From what three roots are the forms of the verb *to be* derived?

2. What are the rules about the repetition or omission of the article before nouns?

3. What is the function of the infinitive mood? Give the indefinite, incomplete, and complete forms of the infinitive.

4. Paraphrase and parse Act II. Sc. i. 231—233.

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CÆSAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. Indicate the peculiarities in grammar and diction which are most frequently met with in Spenser, giving examples of the same.

2. Trace briefly the career of the Red Cross Knight as described in Cantos IX. and X.

3. Explain, noting any grammatical or other peculiarities:

(i) "With forced fury following his *behest.*"

(ii) "For onely worthy you through prowes priefe,
If living man *mote* worthie be, to be her *liefe.*"

(iii) "Had not greater grace
Me reft from it, had bene partaker of the place."

(iv) "Goode lucke prolonged hath thy *date.*"

(v) "What need him care for more?"

(vi) "Till from her bands the spright *assoiled* is,
And have her strength recur'd from fraile infirmitis."

Give the derivation of the words in italics.

4. Paraphrase Canto IX. St. 38.

(*b*)

5. Indicate the full force and appropriateness of the words in italics in the following passages, and paraphrase each passage:

(i) "O *murderous* slumber!
Lay'st thou thy leaden mace upon my boy,
That plays thee music?"

(ii) "I think it is the weakness of mine eyes
That shapes this *monstrous* apparition."

(iii) "And come down
With *fearful* bravery, thinking by this face
To fasten in our thoughts that they have courage."

(iv) "Oh, if thou wert the noblest of thy *strain.*"

(v) "And resolved
To meet all perils very *constantly.*"

(vi) "Whilst I go to meet
The noble Brutus, *thrusting* this report
Into his ears."

6. Give the meaning of the following words as employed by Shakespeare: *belike, climate, success, conceited, sooth, genius, physical, sudden, prick'd, extenuated, powers, indirection.*

7. Paraphrase and comment upon Act V. Sc. i. 92—107.

(*c*)

8. Enumerate shortly the human proofs which Bacon adduces in *The Advancement of Learning,* Bk. I. Sec. vii. of the dignity of learning.

9. What does Bacon consider to have been the result of the influence of learning on Julius Cæsar? Quote any passages which prove that Bacon's conception of the character of Cæsar was different to Shakespeare's.

10. Mention any precepts which Bacon strictly lays down in his *Advancement of Learning,* and inconsistently violates in the same work.

11. Write an essay on one of the following subjects:

(i) English playwrights anterior to Shakespeare.

(ii) The relative claims of Davies and Donne to the title of Founder of the Metaphysical School of Poetry.

12. Attribute to the authors the following works, giving a very short account of each:

Pastime of Pleasure, The Mirror for Magistrates, Tamburlaine the Great, Albion's England, The Rich Jew of Malta, Baron's Wars, The Faithful Shepherdess, Polyolbion.

English Language.

ANGLO-SAXON CHRONICLE, PARKER MS. (EARLE'S EDIT.), ANNALS 894 TO 901; PIERS PLOWMAN, B. TEXT (SKEAT'S EDITION), PROLOGUE AND PASSUS I.

1. How are participles declined in Anglo-Saxon?

2. Give the whole present indicative, the first person singular preterite indicative, the imperative singular, and past participle of: clipian, geláecan, ádrencan, erian, feccan, búan, fylgan.

3. How were the preterites of the weak verbs originally formed? Illustrate your answer by comparison with either of the older Germanic dialects.

4. Translate (explaining any difficulties of construction): Parker MS., Annals 894 (from beginning to "easteweardes ðaes folces," p. 91), 896, 897.

5. Translate the following (i) into modern English, (ii) into grammatical West Saxon of Ælfric's time:

On ðis gære for se king ouer sæ æt te Lāmasse. And ð oðer dei ða he lai an slep in scip. ða ðestrede ðe ðæi ouer al landes and uuard ðe sunne suilc als it uuare thre niht ald mone. an st'res abuten hī at middæi. Wurðen men suiðe ofuundred and ofdred and sæden ð micel ðing sculde cuñ her eft'. sua dide. for ðat ilc gær warth ðe king ded.

About what date and in what part of England was this passage written?

6. What were the chief English dialects in the fourteenth century? Mention some of their distinguishing features. How far can the poem of *Piers Plowman* be said to belong to any one of them?

7. Render into modern English: Prologue, ll. 31 to 45, 68 to 82, 146 to 174; Passus I. 17 to 42, 145 to 163.

Parse *nel* (Prol. l. 38), *rauȝte* (l. 75), *nere* (l. 82), *ritt* (l. 171), *to mene* (Pass. I. l. 11), *nempne* (l. 21).

Give the meaning, and derivation as far as ȝou can, of: chesen, fayteden, ragman, renable, biȝes, laike, wisse, triacle, merciment.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline two nouns of the fourth and one of the fifth declension in Latin, giving their gender and meaning.

2. Give the rules for the formation of the degrees of comparison in Latin, and compare *bonus, parvus, pulcher, facilis, nequam.*

3. Give the future simple and present subjunctive active of the following verbs: *do, doceo, dico, sentio, capio, ago.*

4. Translate and decline: *happier father; best of mothers; two children; everyone.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 185—194 and 241—249.

CAESAR, *de Bell. Gall.* III. c. 9.

6. Give a brief account of the events narrated by Caesar in the first two books of the Gallic War.

7. Translate into Latin:

(i) Brothers ought to help one another.

(ii) All the best men will go.

(iii) When Caesar had crossed the river, the enemy attacked the camp.

(iv) The Gauls sent ambassadors to ask for peace.

(v) He left Rome when it was night.

(vi) The enemy was more numerous, but the Romans were more courageous.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline fully and give the meaning of: *ille, iste, hic, alter, nullus, alius, nemo.*

2. Give the rules for the formation of the degrees of comparison in Latin, and compare *bonus, parvus, pulcher, facilis, nequam.*

3. Give the future simple and subjunctive present active of the following: *do, doceo, dico, sentio, capio, ago.*

4. Give the future simple and perfect indicative of *utor, fruor, fungor.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 185—194 and 241—249.

LIVY, XXI. c. 20.

6. Give a short account, with dates where necessary, of the life and writings of Virgil.

7. Translate (if possible without a dictionary):

(i) The men were slain, and the women and children carried away as slaves.

(ii) When the sun had set, they began the ascent slowly and carefully.

(iii) Do not fear to attack the city, for the king will not be able to bring help to it.

(iv) Sed fugit interea, fugit irreparabile tempus,
Singula dum capti circumvectamur amore.
Hoc satis armentis; superat pars altera curae,
Lanigeros agitare greges [1]hirtasque capellas.
Hic labor; hinc laudem fortes sperate coloni.

[1] hirtus = hairy.

Latin.

Higher Local.

LIVY, I.; HORACE, ODES, III.

1. Classify the uses of the Latin infinitive, illustrating your answer by examples, real or invented.

2. What is meant by (i) the ethical dative, (ii) the dative of advantage, (iii) the predicative dative? Give illustrations to your answer.

3. Parse the following: *metitur, accenderit, adolescunt, oblitus, stupuere.*

[4.] Distinguish between the Latin *gerund* and *gerundive*, and state any facts you know as to their usage by the best Latin prose writers.

5. Translate, with marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

LIVY, I. c. xxxix., §§ 1, 2, 3, 4, from "Eo tempore" to "rex despondit"; and c. xlvii., §§ 3, 4, 5, from "si tu is es" to "quam patria."

HORACE, III. xxi.; xxiii.

6. Explain the structure of the different metres used by Horace in the third book of the *Odes*. Illustrate by quoting and scanning lines where you can.

7. Translate (without a dictionary):

Iamque pedem referens casus evaserat omnes,
Redditaque Eurydice superas veniebat ad auras
Pone sequens, namque hanc dederat Proserpina legem,
Cum subita incautum dementia cepit amantem,
Ignoscenda quidem, scirent si ignoscere Manes.

[8.] Translate into Latin prose:

What he meant—how far he was thinking of those daring arguments of religious and philosophical change, of which the world was beginning to be full, we cannot now tell. The allegory was not finished; at least, it is lost to us.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully, giving the gender and meaning of the following: *λάμπας, ὀδούς, νοῦς, νεώς, γυνή, ὕδωρ, ναῦς, κλείς.*

2. Explain the formation of the degrees of comparison of Greek adjectives, and compare *ἀγαθός, ῥᾴδιος, ὀλίγος, ἐχθρός, ἡδύς.*

3. Give the first person singular of the future and aorist, passive and middle of two verbs in *-ω*, one with consonant, one with vowel stem.

4. Explain the construction known as "accusative and infinitive."

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

XENOPHON, *Anabasis*, IV. c. iii., §§ 5, 6 and §§ 21, 22.

EURIPIDES, *Heracleidae*, 236—246 and 284—287.

6. Give a short account of the life and writings of Xenophon.

7. Translate into Greek:

(i) Many of the Greeks were unwilling to leave the city, but they were compelled to obey the general.

(ii) He told the king he would come before evening with an army.

(iii) Who will help his country? who will withstand her foes?

8. Translate:

(i) *ἀκούσασα γὰρ γυνὴ περὶ αὐτοῦ, ἧς εἶχε τὸ θυγάτριον αὐτῆς πνεῦμα ἀκάθαρτον, ἐλθοῦσα προσέπεσε πρὸς τοὺς πόδας αὐτοῦ· ἦν δὲ ἡ γυνὴ "Ελληνις, Συροφοίνισσα τῷ γένει.*

(ii) *ἐγὼ δὲ μάρτυρα τὸν Θεὸν ἐπικαλοῦμαι ἐπὶ τὴν ἐμὴν ψυχήν, ὅτι φειδόμενος ὑμῶν οὐκέτι ἦλθον εἰς Κόρινθον· οὐχ ὅτι κυριεύομεν ὑμῶν τῆς πίστεως, ἀλλὰ συνεργοὶ ἐσμεν τῆς χαρᾶς ὑμῶν, τῇ γὰρ πίστει ἑστήκατε.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Explain the formation of the degrees of comparison of Greek adjectives, and compare *ἀγαθὸς, ῥᾴδιος, ὀλίγος, ἐχθρὸς, ἡδύς.*

2. Give the first person singular of the future, first or second aorist, and perfect passive of *πλέκω, λέγω, λύω, γράφω, ἐρείδω.*

3. What is meant by the middle voice in a Greek verb? In what tenses does it differ from the passive? Give illustrations.

4. Give the cardinal numbers from one to twelve inclusive, declining those that are capable of declension.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

PLATO, *Apology*, c. xi.

EURIPIDES, *Heracleidae*, 236—246 and 284—296.

6. Give a short account of the life and teaching of Socrates, explaining the causes of his unpopularity.

7. Translate (if possible without a dictionary):

(i) But all that we see with our eyes, or hear with our ears, or perceive by means of any of our senses, is not really existent, but only seems to be.

(ii) When the trumpet sounded they advanced to battle, leaving some chosen men to defend the town.

(iii) *ὦ φίλτατον μέλημα δώμασιν πατρός,*
δακρυτὸς ἔλπις σπέρματος σωτηρίου,
ἀλκῇ πεποιθὼς δῶμ' ἀνακτήσει πατρός.

8. Translate:

(i) *ἀκούσασα γὰρ γυνὴ περὶ αὐτοῦ, ἧς εἶχε τὸ θυγάτριον αὐτῆς πνεῦμα ἀκάθαρτον, ἐλθοῦσα προσέπεσε πρὸς τοὺς πόδας αὐτοῦ· ἦν δὲ ἡ γυνὴ Ἑλληνὶς, Συροφοίνισσα τῷ γένει.*

(ii) *ἐγὼ δὲ μάρτυρα τὸν Θεὸν ἐπικαλοῦμαι ἐπὶ τὴν ἐμὴν ψυχὴν, ὅτι φειδόμενος ὑμῶν οὐκέτι ἦλθον εἰς Κόρινθον· οὐχ ὅτι κυριεύομεν ὑμῶν τῆς πίστεως, ἀλλὰ συνεργοὶ ἐσμεν τῆς χαρᾶς ὑμῶν, τῇ γὰρ πίστει ἑστήκατε.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; AESCHYLUS, PROMETHEUS VINCTUS.

1. Parse the following: *διώρισε, φλῦσαι, λιπάρει, παρεξίασι, ἐλήφθησαν, ὑπέστη.*

2. Distinguish between the meaning of the Greek aorist (i) in the indicative mood, (ii) in oblique moods. Give illustrations.

3. Give the verbs used for the passive of *ἀποκτείνω, ἐκβάλλω, τίθημι, αἱρέω* (*I take*), *εἰσβιβάζω.*

[4.] What is meant by the *accusative absolute*? Distinguish carefully between it and the *genitive absolute.*

5. Translate, with short marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

THUCYDIDES, IV. 92.

AESCHYLUS, *Prometheus Vinctus*, 798—809 and 887—900 (Paley's Text, 817—828 and 906—919).

6. Estimate the value of Thucydides as a historian, and mention the chief peculiarities of his style with which you are acquainted.

7. Translate (without a dictionary):

ὃ δὲ πάντων δεινότατον διεπράξατο Λάκριτος οὑτοσὶ, δεῖ ὑμᾶς ἀκοῦσαι· οὗτος γὰρ ἦν ὁ πάντα ταῦτα διοικῶν. ἐπείδη γὰρ ἀφίκοντο δεῦρο, εἰς μὲν τὸ ὑμέτερον ἐμπόριον οὐ καταπλέουσιν, εἰς φωρῶν δὲ λιμένα ὁρμίζονται ὅς ἐστιν ἔξω τῶν σημείων τοῦ ὑμετέρου ἐμπορίου.

[8.] Translate into Greek prose:

The thoughts that arise from the sight of these contrasts are pleasing, though melancholy; such ideas, sentiments, and feelings as arise in the mind and in the heart at the foot of antique columns, before triumphal arches, in the depths of ruined tombs, and on mossy banks of fountains.

9. Translate:

(i) *μετὰ δὲ ταῦτα ἀνέδειξεν ὁ Κύριος καὶ ἑτέρους ἑβδομήκοντα, καὶ ἀπέστειλεν αὐτοὺς ἀνὰ δύο πρὸ προσώπου αὐτοῦ, εἰς πᾶσαν πόλιν καὶ τόπον οὗ ἔμελλεν αὐτὸς ἔρχεσθαι.*

(ii) *μὴ πλανᾶσθε, ἀδελφοί μοῦ ἀγαπητοί· πᾶσα δόσις ἀγαθὴ καὶ πᾶν δώρημα τέλειον ἄνωθέν ἐστι καταβαῖνον ἀπὸ τοῦ πατρὸς τῶν φώτων, παρ' ᾧ οὐκ ἔνι παραλλαγὴ ἢ τροπῆς ἀποσκίασμα.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate:

Le pain dérobé par le méchant *se réduit* en poussière dans sa bouche. Tu es le plus grand capitaine dont la puissance de Mahomet *ait* armé le bras. Ils *veillaient* sur l'état des affaires. Qu'ont ils fait de cent mille Français que je *connaissais* tous, et qui sont morts maintenant? Comment se fait-il qu'un mot, dont nous autres Anglais ne *saurions* nous passer, vous *fasse* défant?

(i) In what mood and tense are the verbs in italics, and why?

(ii) Write out the verb *mourir*.

(iii) Are *cent* and *mille* ever variable?

(iv) Parse the words *tous, morts, que* (in *que je connaissais*), *autres, se fait-il*.

2. Give the first person of the preterite and subjunctive present of *naître, parvenir, vivre, mettre, taire*. Explain the terms *defective, pronominal, passive, neuter*, giving examples.

3. Translate:

Were there not more than a thousand people there?—No excuse whatever will be accepted.—The man whose name I have just mentioned.—In half an hour.—Do you come from town? Yes, I do.

4. Translate, *Le Directoire*, p. 9, l. 2 to l. 30.

Explain fully in the above translation, *s'étant battus, n'ait été que, quelles que fussent*.

5. Explain the allusions in the following: *la guerre Vendéenne; le règne des Jacobins; les Fédéralistes; les bannières triomphantes de l'armée servaient de voile aux forfaits commis dans l'intérieur; l'abondance des assignats*.

6. Correct, if necessary, and explain: *j'en pense.—Qu'est devenu votre amie?—J'ai lavé mes mains.—Avant la porte*.

7. Write sentences introducing the following words: *afin que, lui, depuis, tel, personne*.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Translate:

J'y suis courue en vain, *c'en* était déjà fait,
Du haut de nos remparts j'ai vu *descendre en* larmes
Le *peuple* qui courait et qui *criait* aux armes;
Et, pour vous dire enfin d'où venait sa terreur,
Le roi n'est plus, madame, et son frère est vainqueur.
On parle aussi d' Hémon; l'on dit que son courage
S'est efforcé longtemps de suspendre leur rage,
Mais que tous ces efforts ont été superflus.
C'est ce que j'ai *compris* de mille bruits confus.

(i) Give the primitive tenses of the verbs in italics.

(ii) Explain *s'est efforcé*, and give the primitive tenses of *se lever*.

(iii) Give the rules for the use of *mille*.

(iv) Parse the words in italics.

2. Distinguish between the use of *ce* and *il*, as subject of the verb *être*. Illustrate by examples.

3. Give the English and plural of *chef-lieu, belle-de-nuit, contre-amiral, casse-tête, porte-étandard, grand'mère*. Account by its history for the apostrophe in the last word.

4. Translate, *Le Directoire*, p. 11, l. 3 to l. 33.

5. Give the character of Robespierre as described by Madame de Staël. To what does she ascribe his fall?

6. "Néanmoins on s'est plaint d'éprouver quelque fatigue en lisant les ouvrages de Madame de Staël." Write a short essay in French explaining the cause of this.

7. Translate, *Le Misanthrope*, Act I. Sc. ii., "*Oronte.*—Voilà qui va bien," to "chacun se récrie."

8. Give a general description of the plots of Molière's different comedies. What was his influence on the French stage?

9. Translate:

He who flatters you is not your real friend.—Please not to interrupt me.—I have been wishing to see you for a long time.—The seven years I have lived.—I should not know how to do without it.—The more one knows the more humble does one grow.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Give the infinitive terminations of the four conjugations, and the corresponding forms in Latin. What parts were lost, and what new ones appeared in the conjugation of French verbs? What change took place in the first and third person singular of some conjugations?

2. How are the Latin deponent and passive forms replaced in French? Shew that *nous sommes, qu'il ait* are regular formations. From what is the present participle derived?

3. Give the origin and force of the following suffixes, and examples of words in which they occur: *ard, ette, aut, quin, erie, at, ment.*

4. Translate:

Rien n'est beau que le vrai, le vrai *seul* est aimable:
Il doit régner partout, et même dans la fable.
De toute fiction l'adroite fausseté
Ne tend qu' à faire aux yeux briller la vérité.
C'est la nature en *tout* qu'*on* admire et qu'on aime.
Un esprit né chagrin plaît par son chagrin *même.*
Chacun pris dans son air est agréable en *soi:*
Ce n'est que l'air *d'autrui* qui peut déplaire en moi.

(i) Parse and derive the words in italics.

5. Give a short account of (i) Blaise Pascal, (ii) Arnauld, (iii) Nicole.

6. "A aucune époque, l'Eglise en France n'eut autant de splendeur." Justify this quotation, and shew what causes had brought about this position of the Gallican Church.

7. Translate, Gérusez, *Histoire de la Littérature Française,* p. 276, "Ce goût de vérité," to p. 278, "il se fait lui-même son dieu."

8. Give a short description of Bossuet, and discuss his oratory. Write a short analysis of his *Discours sur l'Histoire Universelle.*

9. Write an essay (in French) on the French Revolution.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Decline *der gute König, meine neue Feder, ein kleines, Kind, dieser helle Stern.*

2. When are the compound tenses of verbs declined with *haben* and when with *sein?* Which is used with the following? *schreiben, stehen, gehen, fahren, kommen.*

3. Translate into German:

(i) I will go with you.
(ii) I shall go with you.
(iii) I should like to go with you.
(iv) I may go with you.
(v) I can go with you.

4. Translate, *Ernst, Herzog von Schwaben,* p. 28, "*Warmann.* —Im Namen," to p. 29, "ausgelöscht."

Parse *vormal'gen, sämmtlichen, seist, geheimem, brennend, ausgelöscht.*

übergebe. Give the chief parts of this verb, and say why it is not separated here.

5. Why was Ernst excommunicated? Give the date of the events recorded in this play.

6. Translate:

Auf einer grossen Weide gehen
Viel tausend Schafe silberweiss;
Wie wir sie heute wandeln sehen
Sah sie der allerält'ste Greis.

Sie altern nie und trinken Leben
Aus einem unerschöpften Born,
Ein Hirt ist ihnen zugegeben
Mit schön gebognem Silberhorn.

What cases follow *auf, aus, mit?*

7. Translate into German:

Once upon a time there were four little children who all thought they should like to see the world. So they took a large boat and determined to go all round the world by sea, and come back on the other side by land.

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate, *Ernst, Herzog von Schwaben*, p. 27, "*Kunrad.*— Genug," to p. 28, "zertreten sein."

What constructions are used with *entgelten, anheim fallen, hinausweisen*?

Er *führe* nach Italien *mir* das Heer. Explain the use of the subjunctive, *führe* and the dative *mir*.

als offenbaren Aechter. Explain the expression. What is there curious in the word *Aechter*?

2. Enumerate the German auxiliary verbs, and say how each is used.

Translate:

(i) I have heard it said.

(ii) I wish I had heard him say it.

(iii) You ought to have done it.

(iv) I could have done it, if I had tried.

3. Translate, *Der Staat Friedrichs des Grossen*, p. 14, "Aber in Friedrich," to "als diesen selbst."

State briefly the chief characteristics of Frederick noticed by Freytag.

4. Decline with the article: *Bedürfuiss, Stimmung, Eigenschaft, Kraft, Forderung, Leben.*

5. Translate into English:

Soll man des Menschen Loos preisen oder beklagen? Der Sinn des Griechen ist der Lichtseite des Lebens zugekehrt; er erfreuet sich an dem heiteren Lichte des Tages und geniesst in der Fülle der Kraft mit froher Lust die Segensgaben, die der Götter gnädige Hand ihm bietet.

6. Translate into German:

In the first place, as he (Chaucer) is the father of English poetry, so I hold him in the same degree of veneration as the Grecians held Homer, or the Romans Virgil. He is a perpetual fountain of good sense; learned in all sciences; and therefore speaks properly on all subjects.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. During what period of his life was Goethe occupied with the composition of *Faust*? Give the date of its publication. Give briefly an outline of its subject.

2. Translate:

Dass es nicht in meiner Macht gestanden hat, diese reichhaltige Geschichte ganz, wie ich es wünschte, aus ihren ersten Quellen und gleichzeitigen Documenten zu studieren, sie unabhängig von der Form, in welcher sie mir von dem denkenden Theile meiner Vorgänger überliefert war, neu zu erschaffen, und mich dadurch von der Gewalt frei zu machen, welche jeder geistvolle Schriftsteller mehr oder weniger gegen seine Leser ausübt, beklage ich immer mehr, je mehr ich mich von ihrem Gehalt überzeuge.

SCHILLER, *Abfall der vereinigten Niederlande.*

3. "Schiller was eminently an ideal poet." Illustrate this remark by reference to some of his plays.

Shew how he advocated the cause of liberty in all his most important works.

4. Translate into German:

A huge, irregular man, both in mind and person (for his portrait is quite a physiognomical study), full of fire, strength, and impetuosity, Richter seems at the same time to have been in the highest degree mild, simple-hearted, humane. He was fond of conversation, and might well shine in it: he talked as he wrote, in a style of his own, full of wild strength and charms to which his natural Bayreuth accent often gave additional effect.

CARLYLE.

5. Name Richter's principal works.

6. Give the old German forms for *Jedermann, Etwas, immer, irgend, einst.*

How is the indefinite pronoun *man* used? How would you translate it into English?

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Find the product of the sum and difference of 127468 and 125397.

2. Explain the terms: quotient, dividend, factor, divisor, measure, G.C.M., H.C.F., L.C.M.

3. Find the L.C.M. of 4264, 533, 1599, also the H.C.F. of the same numbers.

4. Give rules for the addition, subtraction, multiplication, and division of fractions.

5. Simplify:

(i) $\frac{3}{7} \times \frac{5}{11} \times 2\frac{1}{15}$ of $4\frac{1}{6}$ of $3\frac{4}{17}$.

(ii) $\dfrac{1\frac{1}{3} + 3\frac{3}{4}}{11\frac{3}{7} - 6\frac{1}{2}}$.

(iii) $\cfrac{2}{7 + \cfrac{1}{2 + \cfrac{1}{3 + \frac{1}{4}}}}$.

6. Find the difference between 32·075 and 18·1675, also between 147·25 and ·00375.

7. Express as vulgar fractions, ·0125, ·035, ·03; as decimals, $\frac{3}{8}$, $\frac{7}{11}$, $\frac{14}{125}$.

8. Find the length of carpet, 27 in. wide, required for a room 16 ft. 9 in. by 12 ft. 3 in., also the cost of the same at 5*s.* 9*d.* a yard.

9. Reduce £36 17*s.* 4½*d.* to the decimal of £5, and 4 yds. 2 ft. 8½ in. to the decimal of a mile.

10. At what rate per cent. per annum, compound interest, would a sum of money in 2 years amount to the same as at 3½ per cent. per annum simple interest?

11. Divide 99 into 4 parts, so that the first shall contain 3 for every 4 in the third and every 5 in the fourth, and so that $\frac{1}{3}$ of the second may be $\frac{1}{8}$ of the sum of all the rest.

12. What sum should be insured at £2 2*s.* 6*d.* per cent. on goods worth £783, that the owner may in case of loss recover value of goods and premium?

13. A mixture is made of 10 bushels of flour at 3*s.* 8*d.*, 21 bushels at 3*s.* 10*d.*, and 35 bushels at 4*s.*, what is the price per bushel?

14. A debt is to be discharged by paying $\frac{1}{2}$ of it now and $\frac{1}{20}$ of the remainder every month; when should the whole be paid at once?

15. What length of a cylindrical roller, 18 in. in diameter, must be taken to make 14·137155 solid feet?

16. A person sells out of the 3 per cent. Consols at 99 and invests in Exchequer Bills bearing interest at the rate of $2\frac{1}{2}d.$ per day per cent. when the bills are at a premium of 7*s.* 6*d.*; what effect has this on his income?

ANSWERS TO *FEBRUARY* PAPER.

2. $\frac{81}{17}$, $\frac{107}{19}$, $\frac{4607}{73}$,; $32\frac{1}{11}$, $13\frac{15}{85}$, $32\frac{5}{87}$.
3. (i) $\frac{9}{18}$, $\frac{2}{3}$, $\frac{3}{15}$, $\frac{4}{11}$; (ii) $\frac{713}{765}$, $\frac{25}{47}$, $\frac{69}{115}$, $\frac{27}{85}$. 4. $2\frac{263}{1890}$; $\frac{2969977}{24858514}$.
5. (i) $24\frac{211}{5929}$; (ii) 1. 6. £86 5*s.* $8\frac{8}{16}d.$; 12 cwt. 0 qrs. 19 lb. 4 oz. 5 dwt.
7. 893·18185. 8. 90 miles. 9. £183 18*s.* 1·59375*d.* 10. 157464 dice.
11. £67 9*s.* 4*d.* 12. 343; ·9410.
13. Decrease of capital £84 18*s.* 11*d.*; Increase of Income £25 6*s.* $7\frac{1}{2}d.$
14. 12*s.* $2\frac{9}{40}d.$; $\frac{24}{5849}$. 15. £19 10*s.* 16. £315.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Name and define the figures which have a curved line for one of their boundaries.

2. Produce the smaller of two given lines which cut one another to equal the greater.

3. If two triangles have their three sides equal each to each, they are equal in every respect.

4. If at a point in a straight line two other straight lines upon opposite sides of it make the adjacent angles together equal to two right angles, then these two straight lines shall be in one and the same straight line.

5. Is it ever possible for two lines to make with a third two angles equal to two right angles, and the lines not to be in the same straight line? If it be, shew that it is so by a figure.

6. All the angles made by any number of lines meeting in a point are together equal to four right angles.

7. If two triangles have two sides of the one equal to two sides of the other, each to each, but the angles contained by the two sides of one of them greater than the angle contained by the two sides equal to them, of the other; the base of that which has the greater angle shall be greater than the base of the other.

8. ABC is a triangle having angle at B a right angle and angle at A double angle at C. Shew that side BC is less than double the side AB.

9. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line, and of the square on the line between the points of section.

10. Divide a given straight line into two parts such that their rectangle may equal a given square.

11. Describe a circle passing through three given points not in the same straight line. After proving this proposition, enunciate and demonstrate its corollary.

12. If from a point without a circle two tangents be drawn, the straight line which joins the points of contact will be bisected at right angles by a line drawn from the centre to the point without the circle.

13. In a right-angled triangle, if a perpendicular be drawn from the right angle to the base, the triangles on each side of it are similar to the whole triangle and to one another.

14. If three straight lines be proportionals, the rectangle contained by the extremes is equal to the square on the mean.

15. If the line bisecting the vertical angle of a triangle be divided into two parts which are to one another as the base to the sum of the sides, the point of division is the centre of the inscribed circle.

16. If a straight line stand at right angles to each of two straight lines at their point of intersection, it shall also be at right angles to the plane which passes through them, that is, to the plane in which they are.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—6 inclusive.
Senior work Nos. 4—11 inclusive.
Higher Local work Nos. 9—17 inclusive.

1. Prove that the difference of the squares of two numbers is equal to the sum of the numbers multiplied by their difference.

Find the value of:

(i) $a^2-[b^2-\{a^2+(c^2-d^2)+(e^2-f^2)+d^2\}]$;

(ii) $(a+b-c+d)^2-(a-c+b-d)^2$.

2. Multiply $x^7+x^6y^2+x^5y^3-6x^4y^4+12x^3y^5-7x^2y^6+6xy^7+y^8$ by $x^2+2xy-y^2$.

3. Solve the equations:

(i) $\dfrac{5x-7}{x-1}+\dfrac{4x-3}{x-2}+\dfrac{3x-7}{x^2-3x+2}=\dfrac{3x+5}{x-2}$;

(ii) $(x+9)(x+4)-x^2-11x-28=x^2+16x+48$;

(iii) $x^2+14x+40=4x^2+20x+16$.

4. Solve the equations:

(i) $\sqrt{x+7}+\sqrt{3(x+3)}=\sqrt{x+9}$;

(ii) $\sqrt{x^2+3x+3}+\sqrt{x^2+7x+3}=\sqrt{4x^2+3x+2}$.

5. Simplify:

(i) $x^{a+b+c}\times x^{a-b+d-c}\times x^{b-a-d}$;

(ii) $\dfrac{(xy^2)^{\frac{1}{2}}-(x^2y)^{\frac{1}{2}}+x}{x+y}$.

6. Thirty years ago a man was three times as old as his son, whose present age is 45. How old is the father?

7. If $a:b::c:d$, shew that

(i) $a^2-b^2:b(a-b)::c^2-d^2:d(c-d)$;

(ii) $ma+nb:pa+qb::mc+nd:pe+qd$.

8. When is a series of numbers said to be in harmonical progression? Shew how to sum a series in H.P.

9. In an A.P. the first term is 4 and the fifth is 16. In a G.P. the third term is 20 and the eighth is 1280. Find the harmonic mean between the sixth terms of the two progressions.

10. If a and c be any two quantities, A their arithmetical, G their geometrical, and H their harmonical mean, shew that

$$A = \frac{a+c}{2},\ G = \sqrt{ac},\ H = \frac{2ac}{a+c}.$$

11. Find the cube root of

$$8x^6 - 36ax^5 + 102a^2x^4 - 171a^3x^3 + 204a^4x^2 - 144a^5x + 64a^6.$$

12. Extract the square root of (i) $9 - 6\sqrt{2}$; (ii) $2 + (2 - a^2)^{-\frac{1}{2}}$.

13. Insert 6 arithmetical means between 5 and 17.

14. Find in how many ways the sum of £14 can be paid in half-crowns and guineas.

15. Find the number of permutations that can be made from the letters of the words "Higher Local Examination" taken all together.

16. Define a logarithm. Prove that the logarithm of any power, integral or fractional, of a number is equal to the product of the logarithm of the number and the index of the power. Find log 450, having given log 2 = ·30103, log 3 = ·477121.

17. A man has a number of shillings. He gives two-thirds and one more to one person, and then he gives two-thirds of what he has left and one more to a second person; he then gives two-thirds of what he has left and one more to a third person, and now has nothing left. How many shillings had he at first?

ANSWERS TO *FEBRUARY* PAPER.

1. (i) 4138; (ii) −495.
2. $x^9 + 6x^7y - x^7y^2 + 18x^6y^3 + 48x^5y^5 + x^2y^7 - 72xy^7 - y^9$, $x^3 + 4xy + y^3$.
4. $\frac{e(a+b)}{(c+f)(d+g)}$. 5. $(x^4 - y^4)(x+y)(x^3 + xy - y^3)$. 6. 27 and 9.
7. (i) $x = 5$; (ii) $x = 9$ or -3; (iii) $x = 13$ or 7. 8. 17 and 10.
9. (i) $x = \pm 7$ or $\pm\sqrt{3}$. 10. $x^3 + 2x^2y + 2xy^2 + y^3$. 11. $\frac{10}{63}$.
12. £1488; £1984; £2480; £2976; £3472. 13. $y = 49$.
15. $189x^5y^3$; $11088000000x^6y^5$. 16. *A* walks 4 miles in an hour.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Name the different angles employed in angular measurement, and shew their several advantages.

2. If the sine and cosine of A be known, find $\sin(90^\circ + A)$ and $\cos(90^\circ + A)$.

3. Prove that:

(i) $\sin 3A = 3\sin A - 4\sin^3 A$;

(ii) $\tan A = \dfrac{\sin 2A}{1 + \cos 2A}$.

4. If $\sin A = \dfrac{1}{\sqrt{2}}$, $\sin B = \frac{1}{2}$, and $\sin C = \dfrac{\sqrt{3}}{2}$, where A, B, C are positive angles less than right angles, find $\sin(A + B + C)$.

5. Demonstrate the following identities:

(i) $\tan 3A = \dfrac{3\tan A - \tan^3 A}{1 - 3\tan^2 A}$;

(ii) $\tan A - \cot A = -2\cot 2A$;

(iii) $\sin(A + B)\sin(A - B) = \sin^2 A - \sin^2 B$.

6. The sides of a triangle are 5 ft., 6 ft., and 7 ft. respectively. Find the distance of the centre of gravity from each side.

7. The pressure on the fulcrum of a lever is n lb., and the sum of the forces is 15 lb. Find the distance of each from the fulcrum if their distance apart be 4 ft.

8. Find what effect will be produced on the graduation of the common steel-yard by decreasing the moveable weight.

9. Enunciate and illustrate the principle of the conservation of energy.

10. A ball is projected downwards, and at the end of 3 seconds it is observed to be moving with a velocity of 100 ft. per second. Find the velocity of projection.

11. A stone requires 5 seconds to fall to the bottom of a well. Find the depth of the well.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. The sixth part of a triangle is cut off by a straight line drawn parallel to the base. Find the centre of gravity of the remaining part of the triangle.

2. Find the mechanical advantage, if there be any, gained in a screw, the angle of which is 45°, and the length of the power-arm is n times the radius of the cylinder.

3. A weight of 12 lb. is supported by two strings, each of which is 4 ft. long, the ends being attached to two points in a horizontal line 4 ft. apart. Find the tension of each string.

4. Prove that a body cannot be in stable equilibrium upon a horizontal plane if it rest on less than three supports, the supports being supposed to terminate in points.

5. Enunciate and illustrate the second law of motion, stating clearly what is implied in it.

6. A body of elasticity e is let fall from a height of 12 ft. upon a plane whose inclination is 30°. Find the latus rectum of the parabola described by the body after impact.

7. Two bodies of given elasticity impinge directly upon one another. Find the motion of each after impact.

8. A body is projected with a velocity of 150 ft. per second. Find the directrix of the parabola described.

9. Which are the inferior and which the superior planets? When are planets said to be in inferior and when in superior conjunction?

10. Describe an eclipse of the sun, and say by what it is caused. What is meant by an annular eclipse?

11. "The earth's diameter bears the same proportion to the distance of the visible horizon from the eye as that distance does to the height of the eye above the sea level."

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. Shew that in any triangle $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$; and prove that if $\frac{\cos A}{a} = \frac{\cos B}{b} = \frac{\cos C}{c}$, the triangle is equilateral.

2. Find the circular measure of the angle between the hour and minute hands of a watch at twenty minutes past seven.

3. Find what relations must exist between the cosines of the angles and the sides of a triangle that the triangle may be right-angled.

4. The diagonals of a four-sided figure are p and q, and the area is A. Find the area of the circumscribing square.

5. A, B, C are the angles of a triangle. Find the greatest possible value that $\cos\frac{A}{2}\cos\frac{B}{2}\cos\frac{C}{2}$ can have.

6. Examine the form of the hyperbola from its equation

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1.$$

7. In an ellipse if p and q be the lengths of two semi-diameters at right angles to each other, shew that $\frac{1}{p^2} + \frac{1}{q^2} = \frac{1}{a^2} + \frac{1}{b^2}$.

8. Find the condition that the straight line $Ax + By + C = 0$ may touch the hyperbola $xy = c^2$.

9. Write down the equation to the rectangular hyperbola. Find the equation to the directrix of the hyperbola $xy = c^2$, the angle between the asymptotes being α.

10. If the tangent to an ellipse at the point P meet the axis major produced in T, and PN be the ordinate of the point P, then $CT.CN = CA^2$.

11. If QVQ' be any ordinate to the diameter PV of a parabola, the circle described through the three points P, Q, Q' will intersect the parabola in a fourth point, which depends only upon the position of P.

12. The tangent to the hyperbola at any point P makes equal angles with the focal distances SP and $S'P$.

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. What elements are most generally present in organic compounds? Mention some common substances which are classed as carbo-hydrates and hydro-carbons, giving their formulæ.

2. What is the structure of the flame of a candle? Give an account of the safety-lamp used in mines, and of the flame of a Bunsen burner.

3. Account for the formation of a spectrum. Describe shortly the solar spectrum, noting any peculiarities of the same. Describe any experiments which prove that simple colours are unequally refrangible.

4. Enunciate the hypothesis of the existence of two magnetic fluids, and mention any phenomena which it appears to explain. Distinguish between the magnetic properties of iron and steel.

5. Describe carefully the general structure of the fresh-water mussel and the lobster.

6. Explain the terms *primordial utricle, antheridium, sporangium, ectoderm, arteries, capillaries,* and *veins.*

(*b*)

1. What is the law of density of compound gases? Give the density of hydrochloric acid and carbon dioxide.

2. Describe and compare the elements chlorine, iodine, and bromine.

3. How is pure chlorine gas obtained from hydrochloric acid? If you want 60 grammes of chlorine, how much hydrochloric acid must you decompose?

4. What is *bleaching powder*? In what way does it remove colouring matter?

(*c*)

1. What are the grounds of the assertion that the eye is not achromatic? Describe any experiments which prove that it is not so.

2. Enumerate the sources of light. What is the undulatory theory of light? Shew how that theory explains the colours of transparent bodies, and the phenomena of reflection and refraction.

3. Explain what is meant by *magnetic induction*, *magnetic substances*, and *magnets*. Give examples of each.

4. Describe fully two different forms of two fluid cells, noting particularly the advantages and disadvantages of each.

(*d*)

1. What is *transpiration*? To what extent is it influenced by the varying conditions with which the plant is surrounded? Shew its importance to the plant.

2. Give a short account of the movements of circumnutation in plants.

3. Discuss the influence of light on the growth of plants.

4. Explain the terms *etiolation*, *amylogenesis*, *metastasis*, *geotropism*, and *hygroscopic*.

(*e*)

1. Describe the typical body segment of the endo-skeleton of a vertebrate, taking a crocodile as an example.

2. Describe the anatomy of amphioxus and lepidosiren, pointing out their analogies with lower and higher groups respectively.

3. Enumerate the characters which connect and distinguish pisces and amphibia.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Describe the external features of the silver-fir.

2. Compare morphologically the date-palm and the sycamore, also the crocus and the buttercup.

[3.] Give an account of the formation of the embryo-sac and germinal vesicle in angiosperms. With what structures in the fern do they correspond?

4. What is a *seed*? Compare the seed of the maize and the bean. Give a short account of their germination.

(*b*)

1. What part of a sponge is useful to us? Is a sponge a single animal with many mouths, or many animals with one digestive system? Explain the reasons for your answer, and also the difference between fibrous and calcareous sponges.

2. Describe (i) the organs of locomotion in the sub-kingdom echinodermata, (ii) a fossil member of the sub-kingdom.

3. What are the two classes of English star-fish, and how do they differ from each other?

4. What is a *body cavity*? Explain with reference to the anatomy of a sea-urchin.

(*c*)

1. Define and compare *mountain ranges* and *plateaux*. By what characteristics would you distinguish mountains from hills?

2. What proofs have we that in some places the land is rising or sinking?

3. Give an explanation, with diagrams, of the terms *dip*, *strike*, and *contorted strata*.

4. Write out a table of common aqueous rocks, classing them under the heads calcareous, argillaceous, and siliceous.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. To what is hardness in water due? By what means can it be rendered soft? What causes permanent hardness?

2. What weight of hydrogen is contained in 10 grammes of water?

3. Prove that when substances burn their material is not annihilated.

(*b*)

4. What tests would you apply to ascertain whether a jar contained oxygen or hydrogen gas? If you filled a jar with oxygen and another similar to it with hydrogen, what would be the difference of weight after deducting the weight of the jars?

5. Describe an experiment to prove that air is a mixture and not a chemical compound.

(*c*)

6. Explain what is meant by parallel force, and shew how to find (i) the magnitude and direction of the resultant of two like parallel forces acting on a rigid body; (ii) the magnitude and direction of the resultant of two unlike parallel forces acting on a rigid body.

7. If forces denoted by the sides of a polygon, except one side, act in order, shew that they are equivalent to a single resultant which is parallel to the omitted side.

8. Describe Attwood's machine.

It is found that when the weights are 119 and 121 grs. respectively, the distance passed over in the third sec. is 8 m. Determine the value of 9.

9. Explain the principle on which the safety valve is constructed.

10. Describe any experiment which proves that the pressure of a fluid on a surface is independent of the quantity of the fluid.

If a cubic vessel whose edge is 12 in. be filled with a liquid whose specific gravity in 2·368, what is the pressure upon the side of the vessel?

(*d*)

11. Explain the terms *linear expansion* and *cubical expansion*, and shew the relation of the latter to the former. Mention any exception to the rule that all bodies expand by heat. Give also examples of practical applications of that rule.

12. Account for liquids having an apparent and absolute expansion. How is the coefficient of the absolute expansion of liquids generally obtained?

(*e*)

13. What are the laws which regulate the action of electrified bodies on each other? In developing electricity by friction, how would you proceed in order to obtain positive electricity on the substance rubbed, if that substance were glass, silk, or sealing-wax?

14. Account for insulated electrified bodies losing their electricity.

What would be the effect of:

(i) The approach of a magnet to a bar of iron?

(ii) The approach of a magnet to a bar of steel?

(iii) The approach of the north pole of a magnet to a positively charged glass rod?

(iv) The contact of an electrified and non-electrified body?

15. What is Ampère's theory of magnetism? Describe any experiments which tend to support it.

4. Describe with diagrams:

(i) The circulation of an adult frog, and trace its development.

(ii) The brain of a frog, and compare it with that of a fish.

(*f*)

1. Give the course of the sensory and motor fibres in any spinal nerve. What is known as to (i) the function of the ganglion of the posterior root, (ii) the rate at which a sensory impulse travels along a sensory nerve? What is the function of an afferent nerve?

2. Describe, with diagrams, the structural and histological features of the spinal cord, and the way in which the spinal nerves are attached to it.

3. Describe shortly the structure of the eye, with the arrangements of the various parts, and in detail the microscopic structure of the retina.

4. Give a short account of the manner in which the image is thrown upon the retina. What is meant by *accomodation*, and how is it effected?

(*g*)

1. Enumerate the principal causes of ocean currents, and of the direction they take. Give a sketch of the chief currents in the Atlantic.

2. How are limestones formed? Mention the principal limestones occurring in the English beds.

3. How have some rocks become metamorphic? Give examples.

4. Distinguish *interbedded* from *intruded* igneous rocks. Of what age are the volcanic rocks of the Lake District and North Wales?

Logic.

Higher Local.

1. Compare Mill's logical method with that of Bacon, and shew what is the chief difference between them.

2. Explain, giving an illustration, the method of agreement. What are the imperfections of this method?

3. Give a concrete example of the joint method of agreement and difference, and shew why this is called a joint method.

4. There have been certain objections brought against Mill's four experimental methods. Justify or refute any of these objections with which you are acquainted.

5. What is the difference between observation and experiment. Explain and justify the following statements:

(i) The method of agreement is one of observation.

(ii) The method of difference is one of experiment.

6. Explain the word *empiric*, and shew the difference between empirical and causal laws.

7. What precisely do you mean by (i) plurality of causes, (ii) intermixture of effects? Taking cause to be the sum total of the antecedents, and effect the sum total of the consequences, is any plurality of causes or effects possible?

8. Mark the distinction in meaning in the words *analogy, metaphor, example*; and explain the terms *guess, hypothesis, fact.*

9. What is meant by *explanation*? In what does it differ from proof? Point out the distinction between *ultimate* and *derivative* laws.

10. Give and explain the three steps in the deductive method. Enlarge upon the following quotation, "To the deductive method ... the human mind is indebted for its most conspicuous triumphs in the investigation of nature."

11. Write an essay upon *one* of the following subjects:

(i) Hypothesis.

(ii) Experience.

(iii) The word *because.*

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Work of Pestalozzi.*

1. Who were the most noted teachers connected with the Port Royal Schools? Why did they discourage the use of emulation as a motive power?

2. Sketch the life of Rousseau. What was the first principle of his educational scheme? What points of contact are there between Rousseau's scheme of education and the ideas of Fröbel and Pestalozzi? What do you consider to be the chief defects in his plan of education?

3. What are Locke's views about the teaching of languages? What studies would he include in the plan of study drawn up by him?

4. What wise remarks are made by Locke on the learning of some manual art or trade?

5. Arrange a time table for a senior class preparing to pass the Senior Cambridge Examination, and taking besides the preliminary subjects,—Latin, French, and Botany. The class work is to occupy twenty morning hours, allowing five days to the week. Draw out a diagram shewing the hour for each lesson and the time it occupies, allowing for a break of a quarter of an hour in every morning, and note down the time devoted to each subject in the week.

6. Arrange a time table on the same general plan for a junior class of children from nine to eleven, allowing fifteen morning hours for class teaching. The curriculum should include the following subjects: reading, writing, dictation, arithmetic, elementary French, English history, geography, object lessons, and recitation of poetry. What should be the teaching in English history for such a class? Why has the subject of English grammar been omitted?

7. What are the chief objections to the use of Catechisms? What kind of text-books are the best for practical use, and how should they be used?

8. Mention in what different ways the black board may be made useful in a class. What scheme for the arrangement of analysis do you consider to be the best?

Remarks and Comments on February Answers.

We must remind students for the Higher Local Examination that the Forms of Entry will be ready on March 25th, and may be obtained from the Local Secretaries.

In consequence of many students having asked permission to join the Correspondence Class, and to work the answers to the whole course from September to June, and been refused because it is against our rules to receive papers late, a special Class has been arranged for the months of March, April, May, and the first week of June, to go through the papers set in *The Cambridge Examiner* during the ten months of the course. It is requested that all wishing to join that Class will send in their names to the Editor as early as possible, stating for what subjects they wish to join.

In the English Literature papers we notice that the Spenser and Shakespeare are more carefully prepared than is the Bacon, it being apparently considered that the language and style of the last-named author need little study. We were disappointed to see question 9 left unanswered, though the research it required was not great. We regret to see that the Latin quotations are by many unattempted. We have translated them on the papers, but as the work has many more than we have quoted, we should advise those who are not Latin scholars to endeavour to borrow an old edition of *The Advancement of Learning*, as we understand that many of them have the English of the quotations.

Junior and Senior students must not be content in answering such questions as No. 2, page 56, to merely indicate the peculiarity in the construction or grammar of the passage quoted, but must suggest a reason for the irregularity.

The Higher Local Arithmetic has not for the last two months been so satisfactorily worked as previously. Possibly the papers have been more difficult; that may be the case, but the end of the course is approaching, and we would not wish to leave the hardest work quite to the last. Question 13, page 74, has not been quite correctly worked by any. Many have imagined that the alteration in capital required was that between the

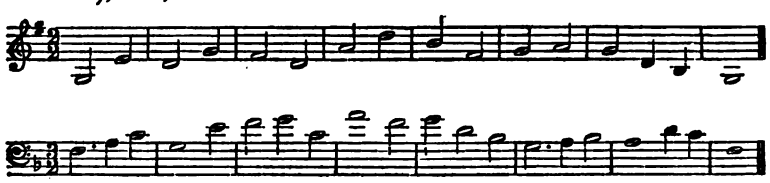
Music.

Junior and Senior.

1. Explain, duple, triple, and quadruple time. How are these divisions of time expressed in time signatures, and why is a second figure required?

2. Give three signatures of duple, three of triple, and three of quadruple time, and write one bar of each, dividing them into beats. (Use always more than one note or rest for each beat.)

3. Write the two following passages on the soprano (C Clef on first line), alto, and tenor staves:



4. Define *scale*, and say into what classes modern scales are divided and sub-divided.

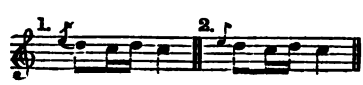
5. Explain the terms *tone* and *semitone*, and say what is the order of tones and semitones in a major scale.

6. How and why does the scale of C differ from all other major scales?

7. What is an octave, and why are eight notes sufficient to shew the formation of a scale?

8. Give two names and meanings of the sign ⁀, and also the meaning of, and the signs for, *staccato*.

9. Write in full the following abbreviations, and give their meanings: *f, ff, sf, sfz, fp, p, pp, p. a p. rall., cres., dim., riten.*

10. What are the names given to the small notes in the following, and how do they differ in execution? Re-write the examples, shewing the exact value and effect of each:

Music.

Higher Local.

1. Write, in the form of a short essay, all you know about the *minuet, scherzo,* and *slow movements* of a Sonata.

2. Write three exercises in three-part counterpoint of the first species, using the *canto fermo* of last month's paper. Place the *canto fermo* alternately in all the parts, and figure the bass.

3. What is the chord of the Augmented Sixth? Explain all its forms, and say what names have been given to them; also explain the chord known as the Added Sixth. Write examples of all with suitable resolutions.

4. (i) Is the continual use of the swell pedal in organ playing advisable? Give reasons for your answer.

(ii) Give some general rules for taking breath in singing, and explain, as you would to a pupil, the method in which it should be taken.

(iii) What is meant by *phrasing* in musical performance, and how is it indicated to the performer?

(Only one section of this question need be answered.)

5. Harmonise the following melody in four parts, *without the aid of an instrument:*

For Candidates for Classes I. and II. only.

6. (i) In what ways is a wave affected by the extent, rate, and mode of the vibrations which produce it?

(ii) Explain Mariotte's Law, and shew how its principle may be applied to the transmission of sound.

(iii) Why does the intensity of a sound diminish in proportion to the distance of the listener from the point of origination?

(iv) To what may the difference between musical and non-musical sounds be attributed?

Constitutional History.

SPECIAL PERIOD, 1295.

Higher Local.

1. "The 13th century shews the King's Council in three phases of its growth." What were these phases?

2. Translate and comment upon Magna Charta, clause 14 (The Constitution of the Common Council of the realm).

3. Describe carefully the representation of the three estates in the Model Parliament. What precedents are there for the representation (i) of the shires, (ii) of the boroughs, (iii) of the lesser clergy before 1295?

4. Give, in chronological order, the public acts by which the severance between England and Rome was effected under the Tudors.

5. Give a brief account of the questions of parliamentary privilege connected with Ferrers, Nowell, Strickland, Smalley, and the County of Norfolk election.

Political Economy.

Higher Local.

1. Discuss Mill's opinion as to the limits of the province of government.

2. "Adam Smith erroneously supposed that the rate of profit depended upon general prices." Criticise this statement.

3. What do you consider are the economic results of the absenteeism of landlords? Consider this question especially in reference to Ireland (i) fifty years ago, and (ii) at the present time.

4. Give a short history of the Poor Laws in England, referring especially to those changes which have been made in them during the present century. Point out the economic defects of our present system, and suggest possible remedies.

5. Do you consider that working men, as a class, have gained through the establishment of Trades Unions? If so, in what way have they gained? Point out clearly what you consider Trades Unions attempt to do, and give your opinion as to whether you think they have been successful in their attempts.

6. Senior Paper, No. 8.

7. Senior Paper, No. 1 (ii) and (iii).

8. Senior Paper, No. 2.

9. Senior Paper, No. 5 (ii).

Political Economy.

Senior.

1. (i) Shew that land differs from all other forms of wealth, and that because of this difference it is of great importance that land should be owned by those who can make it most productive. (ii) What are the necessary requisites for a farmer to obtain the largest produce from the land? (iii) Do you consider an average English farmer at the present time owns those requisites?

2. Give a definition in your own words of *capital*. Point out the exact function of capital in the production of wealth. Can you explain the fact that English capital is found in almost every part of the world?

3. Analyse *profits*. Explain the following statements:

(i) "Cost of labour may increase, and wages fall at the same time."

(ii) "Wages may rise, and yet cost of labour decrease."

4. What do you mean by a *peasant proprietor*? Do you consider that it is advisable to introduce peasant proprietors where they do not at present exist?

5. (i) Enumerate and comment on the advantages which a peasant proprietor possesses over an ordinary English agricultural labourer. (ii) Explain the terms *tenant-right, conacre, cottier*.

6. Explain in detail why a farmer cannot have as much division of labour as a manufacturer.

7. Distinguish between *productive* and *unproductive* labour. Would you consider the labour of a physician, lawyer, and teacher to be productive?

8. What do you mean by the *nationalisation of the land*? What are the supposed advantages which would follow from such a step, and what are some of the possible dangers? Do you think it practicable?

stock bought in the Three per Cents. and the capital put out on mortgage, instead of between the original and the subsequent capital.

We subjoin a statement of the sum:

(i) $90\frac{1}{2} : 100 :: 2460 :$ stock in Three per Cents. $= £\frac{492000}{181}$.

(ii) $100 : \frac{599}{8} :: \frac{492000}{181}$ to capital $£\frac{429885}{181} = £2375\ 1s.\ 1d.$;

$£2460 - £2375\ 1s.\ 1d. = £84\ 18s.\ 11d.$ decrease in capital.

(iii) $100 : \frac{492000}{181} :: 3 :$ first income $£\frac{14760}{181}$.

(iv) $100 : \frac{429885}{181} :: \frac{9}{2} :$ second income $£\frac{773793}{7240}$;

$£\frac{773793}{7240} - £\frac{14760}{181} =$ difference in income $= £25\ 6s.\ 7\frac{1}{4}d.$

In the Natural Philosophy and Science papers, students must remember to fasten together the answers to each subject separately, as delay often arises through this not being done. Higher Local students have been requested before not to send in the answers to (*a*) on the same paper, as the Elementary Chemistry, Physics, and Biology are corrected by different Examiners.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. Write out from memory the account of the visit of the four leprous men to the camp of the Syrians.

2. Describe the "land of the Philistines." Where was it situated? What were its chief features? What tribes had their territory bordering on this district?

3. Explain the apparent contradiction in the two statements made by Elisha, chapter viii. 10.

(*b*)

4. Give additional particulars about the healing of the Gadarene demoniac from the accounts given by St. Luke and St. Matthew. What would be meant by the word *tombs*?

5. What was the position and power of a ruler of the synagogue? Explain the word *Decapolis*.

6. What different terms are used in the Gospels in speaking of the miracles of Christ? Give a better translation of the word rendered *virtue* in Mark v. 30.

(*c*)

7. What is the force of the word *dishonesty* in chapter iv. 2? How is the same word translated in Luke xiv. 9?

8. "But if our Gospel be hid." To what passage in the preceding chapter does this expression refer?

9. Senior Paper, No. 8.

10. Give instances from this Epistle of St. Paul's humility in placing himself on a level with his converts.

(*d*)

11. What is the Greek word rendered *hell* in the fifth article of the Creed? What is its literal meaning?

12. What practical application and use may be made of the first commandment as addressed to ourselves? What was Christ's teaching about the worship of God the Father?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*), (*e*).

(*a*)

1. What was the exact meaning of Hazael's reply to Elisha when the prophet told him what crimes he would commit?

2. There is a Jewish tradition that the four lepers who entered the Syrian camp were Gehazi and his three sons. If this were trustworthy, what incident would it help to explain?

3. What circumstances caused the absence of Joram and Ahaziah from the allied army when the messenger of Elisha anointed Jehu?

(*b*)

4. Give the *literal* interpretation of the words translated, "What have I to do with thee?" What was the word *legion* borrowed from? What modern place on the Sea of Galilee is most likely to have been the scene of this narrative?

5. What have you to remark about the directions given to the disciples when sent on their mission? On what points do the customs of eastern countries throw some light?

6. The disciples "anointed with oil many that were sick." In what other passages in the Bible is the medicinal use of oil alluded to?

(*c*)

7. Explain fully what St. Paul meant by his use of the metaphor contained in the following passage, "We have this treasure in earthen vessels."

8. Give illustrations from occurrences in the life of St. Paul of the statements contained in chapter iv. 8, 9, 10.

9. Junior Paper, No. 7.

(*d*)

10. What sentences taken from the two Prayer Books of Edward VI. were first combined in the Communion Office in the Prayer Book of Queen Elizabeth?

11. Give instances from the New Testament of the Laying on of Hands. Shew what was signified by this act in the instances given.

(*e*)

12. The Epistle to the Ephesians was written during St. Paul's imprisonment at Rome. What allusion is made to this fact in the Epistle? Give the substance of Paley's note on this allusion.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS XLII.—LXXII. II. NEW TESTAMENT: ST. LUKE; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) HOOKER'S ECCLES. POL. V. 50—68; (*b*) PALEY'S HORÆ PAULINÆ, 1 AND 6—16.

I.

1. Give an outline, with dates, of the contemporary history of those nations which in any way influenced the Jewish people, B.C. 584—514.

2. "Ezra and Nehemiah were the parents of the various divisions which henceforth divided Palestine into parties and sects." Examine this statement.

3. Discuss fully the date and authorship of the books which bear the names of Ezra and Nehemiah.

4. Shew clearly that the work of Ezra initiated a new stage of development in the religion of the Jewish nation.

5. Give some account of the prophets contemporary with Ezra and Nehemiah, and explain the following passages:

(i) "The time is not come that the Lord's house should be built."

(ii) "I will be unto her a wall of fire round about."

(iii) "He that toucheth you, toucheth the apple of his eye."

(iv) "He shall bring forth the head-stone, crying, Grace, grace unto it."

II.

6. Indicate, and illustrate by examples, the chief characteristics of style of the Epistle to the Galatians. Shew by parallel passages with which other Pauline Epistles it has the closest affinity.

7. Mark the "lines of intersection" between this Epistle and the history as recorded in the Acts.

How would you reconcile the discrepancies which arise in attempting to harmonise the two accounts?

8. Illustrate from this Epistle,

(i) St. Paul's care for the future well-being of the Church.

(ii) His assertion of his independent position among the Apostles.

(iii) The peculiar features of his work in the Church.

9. Summarise St. Paul's teaching on (i) the Law, (ii) Faith.

10. Very carefully explain the passages:

(i) "A mediator is not a mediator of one: but God is one."

(ii) "Do I now persuade men or God?"

(iii) "The law was our schoolmaster to bring us unto Christ."

(iv) "The law was ordained by angels in the hand of a mediator."

III. (*a*)

11. Give the substance of Hooker's argument on the following Articles of Belief:

(i) "We worship one God in Trinity, and Trinity in Unity."

(ii) "We confess that our Lord Jesus Christ is perfect God and perfect Man."

12. Enumerate the principal charges brought by the Puritans against the administration of the Holy Eucharist in the English Church. How may these charges be respectively answered?

13. Prove that to admit Transubstantiation is in part to deny the doctrine of the Incarnation.

14. Discuss the treatment advocated by Hooker of those who practised occasional conformity, and of Popish recusants.

15. Give a brief sketch of the life of Hooker.

(*b*)

16. Compare the Epistles of St. Paul accepted as genuine, with those proved to be counterfeit.

17. In what cases will conformity between the received history of a man's life and letters bearing his name *not* establish the genuineness of either?

18. When and where was the Epistle to Titus probably written? Point out resemblances in it to the Epistles to Timothy?

19. Give instances of coincidences rejected by Paley as unsuitable to his argument. How far does he expect his reasoning to be accepted as conclusive?

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. What circumstances led to the battle of Pavia? How did that battle affect the policy of England?

2. Give a short account of Luther. Indicate any differences between the Reformation in England and on the continent.

3. Before what authorities did the question of the divorce of Catharine of Aragon come? How was it dealt with by each?

4. Senior Paper, No. 4.

5. Write a short biography of Edward Earl of Warwick (son of George Duke of Clarence), Sir Thomas More, Fisher, Robert Aske, and Cranmer.

(*b*)

6. What circumstances led to the battle of Lewes? Trace the course of events from that battle to the issue of the Dictum of Kenilworth.

7. Senior Paper, No. 7.

8. Describe the battle of Bannockburn, give its date, name the leaders on both sides, and shew its effect on Wales and Ireland.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Mention any differences of climate between Egypt and Scotland, England and Cape Colony, accounting for the same.

2. Give the source and outlet of the following rivers, naming the countries through which they flow: Vistula, Danube, Meuse, Tornea, Severn, Clyde, Shannon, Nile, Orange River, Zambesi.

3. Senior Paper, No. 3.

4. In an outline map of the British Isles give the chief mountains, rivers, lakes, bays, and headlands, also twelve towns in each country.

English History.

Senior.

(*a*) From Accession of Henry VII. to the death of Elizabeth; (*b*) General Questions.

(*a*)

1. Account for Henry VIII. allying himself in 1520 with Germany, in 1527 with France.

2. What circumstances led to the sack of Rome, 1527? How did that event affect the question of the divorce?

3. Trace briefly the course of the Reformation in Europe to 1521, also its progress in England previous to the death of Henry VIII. Indicate the different positions in which Wolsey, Cromwell, and Henry VIII. stood to it.

4. Give the date and conditions of the Great Intercourse, the Annates Act, Act of Appeals, Succession Act, Act of Supremacy.

5. Junior Paper, No. 5.

(*b*)

6. Give a short account of the action of the national party under Simon de Montfort between 1257 and 1264.

7. Shew the descent of the claimants to the Scotch throne in 1291. Comment upon the wisdom of choosing Edward I. as an arbitrator, and upon his action in the matter.

8. Junior Paper, No. 8.

Geography.

Physical, Political, and Commercial Geography of Europe and Africa.

1. Enumerate the most important causes which influence climate. In accordance with these what should be the climate of Archangel, Malta, Montreal, Sierra Leone, Algiers, Iceland?

2. Describe fully two possible routes from St. Petersburg to Peru, and London to Melbourne.

3. Draw a map of the Mediterranean, giving all the islands, with their names, also the names of the countries bounding it.

4. Junior Paper, No. 4.

English History.

Higher Local.

(*a*) GENERAL, 1688—1832; (*b*) SPECIAL, 1603—1625.

(*a*)

1. Give some account of the Revolution of 1688. How was that change received (i) in England, (ii) in Scotland, (iii) in Ireland?

2. Sketch briefly the Jacobite risings in 1715 and 1745.

3. It has been said that in the war 1689—1697 the French won all the battles while the English won all they were fighting for; and in the war of the Spanish Succession the English won all the battles and the French all they were fighting for. How far do you consider these statements to be true? State your reasons.

4. What were the causes of the revolt of the American colonies? Enumerate the colonies which formed the Union, stating in each case the name of the founder and the date of foundation.

5. What were the main charges against Warren Hastings? Give the main provisions (i) of the Regulating Act 1773, (ii) of Pitt's India Bill.

6. Give a brief sketch of the circumstances attending (i) the union with Scotland, (ii) the union with Ireland.

(*b*)

7. Name the possible claimants to the throne on the death of Elizabeth. Indicate the nature of their respective titles to the throne.

8. Give a brief account of the Hampton Court Conference. What was James's attitude with regard to the religious question (i) at home, (ii) abroad.

9. Describe the attempt to bring about a Spanish match.

10. Compare the policy of James with regard (i) to holding of parliaments, (ii) to taxation, with that (*a*) of Elizabeth, (*b*) of Charles I.

English Literature.

Junior.

KING RICHARD II.

1. Give a short account of the events occurring in Act II.

2. In what two different senses are the words *fearful* and *hateful* used by Shakespeare?

3. What calamities called forth the expression used by York, "a tide of woes"? Explain the following: "With signs of war about his aged neck."

4. What supposed evil omens are enumerated by the Captain in Act II., Sc. iv.?

5. What does the Queen say of hope when she is besought not to despair?

6. By whom and on what occasion were the following words spoken?

(i) "That is not forgot
Which ne'er I did remember."

(ii) "I wot your love pursues
A banished traitor."

(iii) "Things past redress are now with me past care."

7. Paraphrase Act II. Sc. iv. 18—24.

8. Note some grammatical peculiarities in Act III. Sc. i.

English Grammar.

1. What should be taken into consideration in breaking up words into syllables? How are the consonants called mutes divided? Explain those divisions.

2. Give the past tense and past participle of the following verbs: seek, owe, leap, clothe, beseech, bereave, blow, spring, sink.

3. What test could you apply when doubtful whether a word is a preposition or a conjunction?

4. Analyse, and parse the words in italics:

"*Madam*, your majesty is too *much* sad:
You *promised, when* you parted with the king,
To lay aside *life-harming* heaviness
And *entertain* a cheerful disposition."

English Literature.

Senior.

KING RICHARD II.

1. What traces have we of the retention of the old Northern plural in *s* or *es* in the verbs occurring in this play?

2. How does Northumberland flatter Bolingbroke after his invasion, and in what manner does Bolingbroke receive it?

3. Explain, "It stands upon your grace to do him right." Can you quote a similar form of expression from another of Shakespeare's plays?

4. Where were the following places? Cotswold, Ravenspurg, Berkley, Pomfret. Give the events connected with them. What have you to remark about Barkloughly Castle?

5. What is the exact meaning of the word *conceit* as used in Act II. Sc. ii.? Criticise the use of the metaphor contained in the following passage:

"Ere my tongue
Shall wound my honour with such feeble wrong."

6. Explain the following words and phrases as used in the third Act: household coat, impress, brooks (*verb*), balm, beadsmen, rusty bills.

7. Paraphrase Act III. Sc. ii. 144—177.

English Grammar.

1. What is the tendency of modern English with regard to the accentuation of words? Give examples of words from earlier writers which differ in this respect from modern usage.

2. Before an adjective or an adverb the Elizabethan writers rarely use the form in *-ly* for adverbs. Illustrate this statement by examples.

3. Shew by examples how the pronoun *it* may be used sometimes as a temporary or provisional subject.

4. Explain the following terms: apposition, gerund, predicate, complement, abstract.

5. Junior Paper, No. 2.

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CÆSAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. (i) "Canto XI. is perhaps the least pleasing of any in the first Book." Why so?

(ii) Mention three metaphorical descriptions of sunset or day-break to be found in Canto XI.

2. Describe the ceremonies of Una's nuptials, and give their origin where you can. Explain *trinall triplicities.*

3. Explain the classical, historical, and other allusions in Canto XI. Stanzas 7, 14, 27, 34, 41, and Canto XII. Stanza 5.

4. Paraphrase Canto XII. Stanza 27. Explain the construction of lines 5, 6, 7, 8.

5. "Warned him *not touch.*" Comment on the omission of *to.*

(*b*)

6. "That Nature might stand up
And say to all the world, *This was a man.*"

Of whom is this said? Quote the whole passage if you can, and comment fully upon it. To whom has the description been applied? What arguments as to the date of the play have been founded on this passage?

7. Scan, and explain any peculiarities in scansion:

(i) "But see whether Brutus be alive or dead."

(ii) "By this vile conquest shall attain unto."

(iii) "And strive your excellent self to excel."

8. (i) Comment grammatically on:

(*a*) "I found no man *but he* was true to me."

(*b*) "All the conspirators *save* only *he*."

(ii) What rules does Shakespeare appear to follow in his use of *thou* and *you*? Quote passages in illustration.

(iii) Explain: (*a*) "There is so much that thou wilt kill me straight." (*b*) "Smatch of honour." (*c*) "If Messala will *prefer* me to you."

(*c*)

9. What distinctions does Bacon draw between the merit of lawgivers, founders of states, etc., and of inventors of new arts?

10. How does Bacon illustrate the influence of learning on men in their intercourse with each other?

11. (i) Bacon mentions six Roman emperors learned or friends to learning; give a very short account of what he tells us about each of them.

(ii) Mention three notable instances of Alexander's appreciation of learning.

12. Write an essay on one of these subjects:

(i) Bacon's description of the state of England under Elizabeth; how far is it a true picture?

(ii) Bacon's style; the construction of his sentences, his use of words, &c.

English Language.

ANGLO-SAXON CHRONICLE, PARKER MS. (EARLE'S EDIT.), ANNALS 901 TO 924; PIERS PLOWMAN, B. TEXT (SKEAT'S EDITION), PASSUS II. III. IV.

1. What is the use of the gerund in Anglo-Saxon? Give illustrations.

2. What do you know of the history of the strong-weak (or præterito-præsentia) verbs? Give the first and second person singular, present indicative, and the first person singular, preterite, of the Anglo-Saxon verbs for *I may, I can, I know* (both verbs), *I possess, I dare.* How do you account for the form of the preterite *wisse* (or *wiste*)?

3. How does the verb *I will* differ from the other strong-weak verbs? Write out its present indicative in the oldest form.

4. Give examples of vowel mutation (Umlaut) in the formation of (i) plurals, (ii) feminines, (iii) verbs from nouns, (iv) transitive from intransitive verbs, explaining in each case the process of letter change.

5. Translate (explaining any difficulties of construction), Parker MS. Annals 901, 905, 911, 917, 918, 921.

6. Translate into Anglo-Saxon:

There is no rational creature that has not freedom. Whoever has reason, he can judge and discriminate what he ought to desire and what he ought to shun; and each man has this freedom, that he knows what he will and what he will not.

7. Render into modern English, *Piers Plowman,* Passus II., ll. 29—33, 157—184; Passus III., ll. 76—90, 154—161; Passus IV., 113—133.

Parse *ylakked,* Pass. II., l. 21; *bilowen,* l. 22; *beire,* l. 66; *worcheth,* l. 124; *mellud,* Pass. III., l. 36; *ouȝte,* l. 68; *wost,* l. 179; *gone,* l. 244; *gose,* Pass. IV., l. 37.

Give the meaning and derivation of: *ewages,* Pass. II., l. 14; *sokene,* l. 110; *abiggen,* l. 127; *boun,* l. 159; *meynprise,* l. 196; *clokke,* Pass. III., l. 34; *wernard,* l. 179; *menske,* l. 183; *recrayed,* l. 257; *daunten,* l. 286; *mansed,* Pass. IV., l. 160; *chetes,* l. 175.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline fully the following, giving their gender and meaning: *tussis, imber, ovis, bos, sus, senex.*

2. Give the Latin ordinal numbers from one to twelve inclusive. Translate into Latin 123, 4379.

3. Give the first person singular of the perfect, the supine, and infinitive active of the following: *venio, capio, ago, dono, peto, facio, video, teneo.*

4. Give the future simple and subjunctive present active of the following: *possum, volo, fio, eo.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 289—297 and 361—369.

CAESAR, *de Bell. Gall.* III. c. 11.

6. Give a short account, with dates where necessary, of the life of Virgil.

7. Translate into Latin:

(i) Everyone will go from Rome into the provinces.

(ii) If the father dies the property will be given to the State.

(iii) If you were to go to Athens you would find your sister there.

(iv) My friend, trust in the gods, and do not grieve.

(v) He ordered the bravest soldiers to advance against the enemy.

(vi) The city was besieged by the Romans for sixty-five days.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline fully and give the meaning of the following: *gracilis, lampas, gigas, crater, felix, melior, nullus, quivis.*

2. Give the future simple and imperfect subjunctive active of the following: *possum, volo, eo, fio, malo, facio.*

3. Distinguish between *quisquam, quippiam,* and *aliquis.* Give illustrations.

4. What is meant by (i) a frequentative, (ii) a desiderative, (iii) an inceptive verb? Give illustrations.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 289—297 and 361—369.

LIVY, XXI. c. 28, § 5 to end of chapter.

6. Give a short account, with dates where necessary, of the origin and development of historical writing at Rome down to the time of Livy.

7. Translate (if possible without a dictionary):

(i) If it rains I shall not go.

(ii) If you will stay here I will go to Rome.

(iii) If it were to rain I should not go.

(iv) If it had rained I should not have gone.

(v) I told him that if it rained I should not come.

(vi) I will tell him that if it rains I shall not come.

(vii) In Cumano nuper cum mecum Atticus noster esset nuntiatum est nobis a M. Varrone, venisse eum Roma pridie vesperi et nisi de via fessus esset, continuo ad nos venturum fuisse.

Latin.

Higher Local.

CAESAR, DE BELLO GALLICO, v.; VIRGIL, AENEID, v. VI.

1. Decline the following, and give their gender and meaning: *crater, aer; gigas, lampas, supellex, laurus.*

2. What is meant by (i) the accusative of respect, (ii) the accusative of time, (iii) the cognate accusative, (iv) a double accusative? Give illustrations.

[3.] Classify the uses of the Latin supines.

4. Give the rules for the formation of the comparative and superlative of adjectives and adverbs in Latin. Compare *bonus, nequam, male, magnus, faciliter.*

5. Translate, with marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

CAESAR, *de Bell. Gall.* v. 56.

VIRGIL, *Aeneid,* VI. 268—281 and 426—439.

6. Give an account of any peculiarities in the style of Virgil with which you are acquainted, and compare his hexameter with that of any other Latin poet.

7. Translate without a dictionary:

Vagus inde an consilio ducis subditus rumor, advenisse Mucianum, exercitus in vicem salutasse, gradum inferunt quasi recentibus auxiliis aucti, rariore iam Vitellianorum acie, ut quos nullo rectore suum quemque impetus vel pavor contraheret diduceretve.

8. Translate into Latin prose:

I do not say that every man, or the same man at all times, adopts the same principles and method in his moral reasoning. On the contrary, I think that moralists have erred importantly in not seeing and admitting that men, in so far as they reason upon morals and attempt to make their practice rational, do so, naturally, upon different principles and by different methods.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully, giving the gender and meaning, the following: *γένος, οὖς, γραῦς, βασιλεὺς, νικὴ, δορὺ.*

2. Decline the following: *εἷς, μέγας, πολὺς, ἀληθὴς, πενὴς, δικηχύς.*

3. Give the future simple and perfect indicative of *λύω, πλέκω, λέγω, πράσσω, διδάσκω, τρέφω.*

4. Parse the following: *εἶπον, φλέβα, εἶδον, ᾔδη, ἔγνω, ἐβούλετο.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

XENOPHON, *Anabasis*, IV. c. iv., §§ 7, 8, 9 and §§ 19, 20.
EURIPIDES, *Heracleidae*, 297—308 and 333—343.

6. Give a short account, with dates where necessary, of the life and writings of Euripides.

7. Translate into Greek:

(i) If you go I will not stay here.
(ii) If you were to go I would not stay here.
(iii) If you had gone I would not have stayed here.
(iv) I told you that if you went I should not stay here.

8. Translate:

(i) *καὶ ἐπελάθοντο λαβεῖν ἄρτους, καὶ εἰ μὴ ἕνα ἄρτον οὐχ εἶχον μεθ' ἑαυτῶν ἐν τῷ πλοίῳ. καὶ διεστέλλετο αὐτοῖς λέγων, Ὁρᾶτε, βλέπετε ἀπὸ τῆς ζύμης τῶν Φαρισαίων καὶ τῆς ζύμης Ἡρώδου.*

(ii) *τὸ στόμα ἡμῶν ἀνέῳγε πρὸς ὑμᾶς, Κορίνθιοι· ἡ καρδία ἡμῶν πεπλάτυνται· οὐ στενοχωρεῖσθε ἐν ἡμῖν, στενοχωρεῖσθε δὲ ἐν τοῖς σπλάγχνοις ὑμῶν.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate into Greek, giving the gender, and decline the following: *woman, hair, key, knee, tooth, lion, dog, glory.*

2. Give the rules for the formation of the comparative and superlative in Greek adjectives, and compare *αἴσχρος, ἀγαθός, ὀλίγος, μακρὸς, μικρὸς, φίλος.*

3. Give the paradigm of the first aorist active and perfect passive of *λέγω, δείκνυμι, τίθημι, πλέκω.*

4. Give the rules for the conversion of direct into indirect speech in Greek.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

PLATO, *Apology*, c. 13.

EURIPIDES, *Heracleidae*, 297—308 and 353—368.

6. Give a short account of the origin and development of the Greek drama, accounting for the Doric forms in the choruses.

7. Translate (if possible without a dictionary):

(i) When all was arranged for an attack the general ordered the soldiers to advance upon the foe.

(ii) There will be no danger if we remain within the walls and wait for the help of our allies.

(iii) Many plans were discussed, but the council came to no decision, and matters remained undecided for some days.

8. Translate:

(i) *καὶ ἐπελάθοντο λαβεῖν ἄρτους, καὶ εἰ μὴ ἕνα ἄρτον οὐχ εἶχον μεθ' ἑαυτῶν ἐν τῷ πλοίῳ. καὶ διεστέλλετο αὐτοῖς λέγων Ὁρᾶτε, βλέπετε ἀπὸ τῆς ζύμης τῶν Φαρισαίων καὶ τῆς ζύμης Ἡρώδου.*

(ii) *τὸ στόμα ἡμῶν ἀνέῳγε πρὸς ὑμᾶς, Κορίνθιοι· ἡ καρδία ἡμῶν πεπλάτυνται· οὐ στενοχωρεῖσθε ἐν ἡμῖν στενοχωρεῖσθε δὲ ἐν τοῖς σπλάγχνοις ὑμῶν.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, ANTIGONE.

1. Parse the following: *καθιέντες, ἐπετάχυνον, διεφθάρησαν, ἀναλοῦντες, ἐγχειρῆσαι, ἤσθοντο.*

2. Classify the uses of *ἄν* in Greek.

3. What is meant by (i) the deliberative subjunctive, (ii) the dative of the agent, (iii) the accusative quasi-cognate. Give illustrations.

[4.] Give any rules you know as to the order of words in a Greek sentence, and the connexion of one sentence with another.

5. Translate, with marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

THUCYDIDES, IV. c. 115.

SOPHOCLES, *Antigone*, 726—741 and 781—800.

6. Compare the style and method of Aeschylus and Sophocles, and point out the changes introduced by the latter into the drama as it existed after the improvements of Aeschylus.

7. Translate (if possible without a dictionary):

Ἀιάζω τὸν Ἄδωνιν· ἐπαιάζουσιν Ἔρωτες.
ἄγριον, ἄγριον ἕλκος ἔχει κατὰ μηρὸν Ἄδωνις·
μεῖζον δ' ἁ Κυθέρεια φέρει ποτικάρδιον ἕλκος·
κεῖνον μὲν περὶ παῖδα φίλοι κύνες ὠρύονται
καὶ Νύμφαι κλαίουσιν ὀρειάδες· ἁ δ' Ἀφροδίτα
λυσαμένα πλοκαμῖδας ἀνὰ [1]δρυμὼς ἀλάληται
πενθαλέα, [2]νήπαστος, ἀσάνδαλος.

[1] *δρυμὸς* = oak coppice. [2] *νήπαστος* = not touching food.

8. Translate into Greek prose:

Fox immediately rose, but so great was his emotion that he could not utter a word; nor was it until tears had come to his relief that he was enabled to proceed. He complained in broken accents that a friendship of more than twenty years should be terminated by a difference of opinion on a political question.

9. Translate:

(i) *τίνι ὁμόια ἐστὶν ἡ βασιλεία τοῦ Θεοῦ; καὶ τίνι ὁμοίωσω αὐτήν; ὁμόια ἐστὶ κόκκῳ σινάπεως, ὃ λαβὼν ἄνθρωπος ἔβαλεν εἰς κῆπον ἑαυτοῦ· καὶ ἠύξησε, καὶ ἐγένετο εἰς δένδρον μέγα, καὶ τὰ πετεινὰ τοῦ οὐρανοῦ κατεσκήνωσεν ἐν τοῖς κλάδοις αὐτοῦ.*

(ii) *ὑμεῖς γὰρ ἐπ' ἐλευθερίᾳ ἐκλήθητε, ἀδελφοί· μόνον μὴ τὴν ἐλευθερίαν εἰς ἀφορμὴν τῇ σαρκὶ, ἀλλὰ διὰ τῆς ἀγάπης δουλεύετε ἀλλήλοις.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Write out the verb *rire*, shewing the primitive tenses and their derivatives; and give the present and perfect participles of *paraître, traduire, éteindre, résoudre, cueillir, bénir.*

2. How are adverbs formed from adjectives? Give the adverbs corresponding to *heureux, lent, bon, beau, petit, secret, gentil.*

3. Translate:

He is loved by everybody.—Flowers are often sold in the market.—Charles the Second was the son of Charles the First.—We shall be in Paris on the 24th of May.—She was quite ready to forgive me for my mistake.

4. Translate:

Un renard à jeun aperçut une poule au pied d'un arbre: il allait se jeter sur elle, quand il entendit le bruit d'un tambour suspendu à l'arbre, et *que* les branches, *agitées* par le vent, faisait mouvoir. Oh! oh! dit maître renard, que faîtes-vous là? Je suis à vous à l'instant. Qui que vous *soyez* à *en* juger par le bruit, vous devez avoir plus de chair qu'une poule; j'*en* ai *tant* mangé que j'en suis dégoûté depuis longtemps; vous me dédommagerez *des* mauvais repas que j'ai *faits*. Il grimpa sur l'arbre, saisit sa proie, et travailla *des* griffes et des dents; mais *quelle* fut sa surprise, lorsqu'il vit que le tambour était vide, et qu'il n'y trouva que de l'air au lieu de chair. Ce qui fait le plus de bruit n'est pas toujours ce qu'il y a *de* plus solide, ou de plus avantageux.

(i) Comment carefully on the words in italics, and explain any grammatical peculiarities in them.

(ii) Distinguish between *échapper à* and *échapper de.*

5. Translate: *Le Directoire*, p. 13, l. 24, "Hélas," to p. 14, l. 19, "la douleur."

(i) "*S'était emparé.*" Why *était*?

(ii) "L'on croit *en* avoir le droit," &c., l. 10. Explain *en*, and shew why *y* is not used.

(iii) "*étaient.....envoyés*," l. 33. What tense is used here?

6. Give a short summary of Chapter V., *Le Directoire*, shewing the state of France during the fifteen months that intervened between the fall of Robespierre and the coming into power of the five Directors.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Write down the 1st person of each tense of *croître, absoudre, s'entretenir, acceuillir,* shewing the primitive tenses and their derivatives.

2. "Deux verbes ne peuvent avoir un complément commun, s'ils exigent un complément différent, l'un direct, l'autre indirect." Give six sentences in illustration of this rule.

3. Translate into French:

"Might I give counsel to any young man, I should say to him, Try to frequent the company of your betters. In books and in life, that is the most wholesome society; learn to admire rightly; the great pleasure of life is that. Note what great men admired; they admired great things; narrow spirits admire basely, and worship meanly.

4. Translate: *Le Directoire,* p. 23, l. 24, "La Convention," to p. 24, l. 24, "les témoins."

5. Junior Paper, No. 6.

6. Translate: *Le Misanthrope,* Act II. Sc. i., "*Alceste.*—Non ce n'est pas madame," to "trouver le secret;" and Act II. Sc. iii., "*Célimène.*—Mon Dieu," &c.

(i) Derive the words *cohne, heur, assiduités.*

(ii) Comment on *à qui, chasseroit, offerte, soupirans, ont-ils (de vous toucher), su, achève, je, voi, rendue.*

7. Complete (from memory) the following lines:

"Si le roi m'avait donné
Paris sa grand'ville."

8. Translate:

Après la religion vient la vertu, que Molière a été accusé de tourner en ridicule. L'imputation porte sur *le Misanthrope,* et l'accusateur est J. J. Rousseau; mais si le reproche est grave, la méprise ne l'est pas moins. En effet, Alceste, tout honnête homme qu'il soit, n'est point vertueux, puisque la vertu n'existe pas sans contrainte, sans sacrifice et détachement de soi même: or, Alceste n'en est pas là. L'erreur de Rousseau vient de ce que, daus son orgueil et sa sauvagerie, il se prenait lui-même pour un type de vertu; de sorte qu'en paraissant défendre Alceste, il plaide sa propre cause.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Derive *selon, nonobstant, aussi, aîné, oui, milieu, assez.* Account for any peculiarities in *Hôtel-Dieu, sourcil, capitaine.*

2. Give the history of (i) the double forms *hardiesse, audace; essaim, examen; créance, croyance;* (ii) the double meaning of *feu* (fire and late). Why can it never take the plural form when signifying *late*? (iii) the words *lansquenet, lierre, écluse, guichet.*

3. From what are the dipthongs *au, eau, eu, ou* derived? Illustrate each by examples. Shew how the French *j* and *g* often correspond to Latin *i.*

4. Translate: *Aventures de Télémaque,* Libre XIV. "Télémaque en s'eveillant," to "voir au moins votre ombre dans le royaume de la nuit."

5. Write a short account of Fénélon. What occasioned the writing of Télémaque? Mention some other of his works.

6. "Grâce à Bossuet, nous savons combien Fénélon, qui a toujours prêché la paix, avait de ressources pour la guerre." Explain fully the above quotation.

7. Translate:

Dans quel pays sommes-nous donc? Nous allons le voir sans sortir de la chambre. Sur tout le haut de la *paroi* irrégulière à laquelle se soude l'escalier, et dont plus *de* la moitié inférieure est revêtue, comme les autres, d'un lambris de chêne, nous voyons *de* grandes pancartes placées là peut être à cause de leur forme. Elles *y* sont donc reléguées *plutôt* qu'exhibées, et il nous *faudra monter* les douze marches de cet escalier engagé dans la muraille pour nous convaincre que ces *longues* bandes de parchemin, coloriées dans les tons les plus durs, sont des cartes de géographie ou de navigation, et des plans de villes fortes.

Comment on the words in italics.

8. Write a short essay in French on "The influence on the French language of the Germanic invasion."

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben,* p. 31, "Dort hebt," to "der Vater Edelgards."

2. (i) Parse *sich, ins, aufgescheuchtes, zween, steigen ab*; (ii) *gebahnte Strassen.* Is the adjective weak or strong? Give the reason for your answer.

3. How are adjectives declined after *ein, mein,* and similar words? Explain why the weak and strong declension are here mixed.

Translate into German: (i) A beautiful wood; (ii) Our black horse.

4. Decline fully *ich, du, er, kein, unser.* Distinguish between the relatives *wer* and *welcher.*

5. Translate into German:

(i) Whoever told you this was mistaken.

(ii) Who is the girl I saw in the garden?

(iii) Is this the author, whose book I read with so much pleasure?

(iv) To whom do I owe the money?

(v) On the last house in a little village stood a stork's nest. The stork-mother sat in the nest with her four young ones, who put out their heads with the little black beaks.

6. Translate into English:

In China weisst du wohl, ist der Kaiser ein Chinese, und alle, die er um sich hat, sind auch Chinesen. Es ist nun viele Jahre her, aber gerade deshalb ist es werth, die Geschichte zu hören, ehe sie vergessen wird! Des Kaisers Schloss war das prächtigste der Welt; ganz und gar von feinem Porzellan, so kostbar, aber so spröde, so misslich daran zu rühren, dass man sich ordentlich in Acht nehmen musste. ANDERSEN.

7. Translate: *Ernst, Herzog von Schwaben,* p. 34, "Zur bösen Stunde," to p. 35, "für alles Rath."

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 21, "Und als der treue," to p. 22, "sich aufthat."

Account for the case of *Genusses, Bildung, Spotte, Muth, Philosophen, Wesen.*

2. What constructions are used with *erinnern, freuen, vorziehen, schmeicheln, frieren?*

3. Translate: *Ernst, Herzog von Schwaben*, p. 37, "Bis nun," to p. 38, "dem Ird'schen Lebewohl."

Decline, with the article, *Stift, Stadt, Burg, Hoffnung, Kreis, Auge.*

4. Translate:

Ich hatte seit frühester Jugend einen ganz eigenen Begriff von Wien; ich konnte mich nicht enthalten an Utopien dabei zu denken. Alles, was man von dort hörte, klang so zauberisch; einige Gemälde die ich täglich vor Augen sah, und wovon das Eine eine prächtige Schlittenfahrt vorstellte, die über den Mehlmarkt fuhr, das Andere aber Wien im Sonnenglanze und Sommerschmucke zeigte, vom Belvedere aufgenommen, hatten meine jugendliche Phantasie ganz wunderbar erhitzt.

5. Translate into German:

The crocus and daisy were the first that ventured to peep out in the early spring; and then as the soft breeze breathed gently, and the sun smiled more warmly over the benumbed ground, other blossoms timidly opened their leaves, tiny blades sprang up, and soon the spirit of life and beauty moved abroad upon the earth.

6. How are adverbs formed in German? Give examples.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Who were Kotzebue, Iffland, Tieck, Schlegel? Name some of their writings.

2. Name the chief German philosophers of the period 1750—1800. Give a brief account of one of them.

3. Enumerate, in chronological order, Schiller's chief works.

4. Translate into English:

Der Verfasser der unsichtbaren Loge hatte von Lichtenberg so starke Busspredigten gegen die Menschenunkunde der deutschen Romanschreiber und Dichter gelesen, und gegen ihre so grosse Unwissenheit in Realien ehen so wol als in Personalien, dass er zum Glück den Muth nicht hatte, wenigstens früher als im 28sten Jahre das romantische Wagstück zu übernehmen.

JEAN PAUL.

5. Enumerate Goethe's principal prose works, and give a short account of each.

6. Translate into German:

Of all the failings usually attributed to literary men, Goethe had the least of what could be called jealousy; of all the qualities which sit gracefully on greatness, he had the most of magnanimity. The stream of Time will carry down to after ages the memory of several whose names will live only in his praise; and the future students of Literary History will have no fact to note of Goethe similar to that noted of Shakespeare; they will see how enthusiastic was his admiration of his rivals Schiller, Voss, and Herder, and how quick he was to perceive the genius of Scott, Byron, Béranger, and Manzoni.

7. Translate into modern German and English:

Nu wâren deme künige diu maere geseit,
Daz dâ komen waeren ritter wol gemeit:
Die fuorten rîche brünne und êrlich gewant;
Si derkande nieman in der Burgunden lant.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Multiply £74 13*s.* 8½*d.* by 15½, and divide 36 miles 5 fur. 108 yds. 3 ft. by 7¼.

2. If a man walk 120 paces of 33 in. in a minute, how far can he walk in an hour?

3. Find the average age of the boys in a form in which there are 2 at 17, 4 at 16, 6 at 14, 8 at 13, 5 at 12, 2 at 11, and 1 at 10.

4. Express as fractions of a pound, 14*s.* 3*d.*, 16*s.* 8*d.*, 15*s.* 4*d.*, 11*s.* 1*d.*, 7*d.*, 4*s.* 9*d.*

5. Add together, $\frac{1}{6}$, $\frac{1}{17}$, $\frac{2}{21}$, $\frac{10}{119}$. Find the difference between $\frac{5}{143}$ and $\frac{8}{231}$.

6. Express as decimal fractions, $\frac{4}{7}$, $3\frac{1}{3}$, $2\frac{5}{11}$, $\frac{3}{4}$, $\frac{171}{175}$.

7. Multiply 3·76245 by 1·375, also 3·76245 by 137·5.

8. Divide 3·76245 by 8, also by 3·5.

9. Divide, correct to 6 places, 42·125 by ·3, also 37·3 by 4·6.

10. Find the present worth of £1000, due 12 months hence, at 5 per cent. compound interest, the interest being paid quarterly.

11. Two merchants, *A* and *B*, start with the same capital in trade. At the end of a year *A* has gained £3000 and *B* lost £1000; *A* has then twice as much as *B*. What did each start with?

12. Find the cubical of a square tank, length 5 ft., height 4 ft.

13. A rectangular field is 200 yards by 150 yards. Find the length of a path across it from corner to corner.

14. If the radii of two concentric circles be 15 feet and 20 feet, find the area of each circle, and the area which lies between their circumferences.

15. A person invests £1365 in the 3 per cents. at 91, and sells out £1000 stock when they have risen to $93\frac{1}{2}$, and the remainder when they have fallen to 85. Find his gain or loss.

16. Distinguish between interest and discount.

Find the difference between the interest and discount on £544 5*s.* 5*d.* for 1 year at $4\frac{1}{2}$ per cent.

ANSWERS TO *MARCH* PAPER.

1. 523683415. 3. 12792; 533.
5. (i) $2\frac{7}{24}$, (ii) $1\frac{25}{403}$, (iii) $\frac{60}{253}$. 6. 13·9075; 147·24625.
7. $\frac{1}{80}$, $\frac{7}{200}$, $\frac{3}{100}$; ·375, ·6$\dot{3}$, ·112. 8. $30\frac{43}{108}$ yds.; £8 14*s.* $9\frac{17}{36}d.$
9. 7·37375; ·0027856 etc. 10. 3·482587 etc. per cent. 11. 18, 27, 24, 30.
12. £800. 13. 3*s.* $10\frac{5}{36}d.$ 14. $5\frac{1}{4}$ mths. 15. 2 ft. 16. 15*s.* $1\frac{9}{11}d.$

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Prove that all right angles are equal; that magnitudes which coincide are equal.

2. If two triangles have two angles of the one equal to two angles of the other each to each and the sides adjacent to equal angles also equal, the triangles are equal in every respect.

3. If two straight lines cut one another the vertically opposite angles are equal.

4. From a given point draw the shortest line possible to a given straight line.

5. Any two sides of a triangle are together greater than the third.

Any side of a triangle is greater than the difference between the other two sides.

6. The sum of the sides of an isosceles triangle is less than the sum of the sides of any other triangle on the same base and between the same parallels.

7. What are the circumstances under which one line will be parallel to another?

8. At a given point in a given straight line make a rectilineal angle equal to a given angle.

On what does the equality of angles depend?

9. If the opposite angles of a quadrilateral figure be equal, the opposite sides shall also be equal, and the figure shall be a parallelogram.

10. If the three sides of a triangle be bisected, the perpendiculars drawn to the sides at the three points of bisection will meet in the same point.

11. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the lines between the points of section.

12. If two sides of a trapezium be parallel, the triangle contained by either of the other sides, and the two straight lines drawn from its extremities to the bisection of the opposite side is half the trapezium.

13. If the sides of two triangles about each of their angles be proportionals the triangles shall be equiangular, and the equal angles shall be those which are opposite to the homologous sides.

14. Planes to which the same straight line is perpendicular are parallel each to the other.

15. Draw a straight line through a given point so that the sum of the perpendiculars to it from two other given points may be equal to a given line.

16. Determine how many equal circles may be described round another circle of the same diameter, touching each other and the interior circle.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—5 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 7—16 inclusive.

1. Simplify:

$$\text{(i)}\ \frac{a+\dfrac{b}{1+\dfrac{a}{b}}}{a-\dfrac{b}{1-\dfrac{a}{b}}}(a^6-b^6);\quad \text{(ii)}\ \frac{\dfrac{a}{b}+\dfrac{b}{a}}{\dfrac{a}{b}-\dfrac{b}{a}}\div\frac{\dfrac{a^2}{b^2}-\dfrac{b^2}{a^2}}{\left(\dfrac{1}{b}+\dfrac{1}{a}\right)^2}.$$

2. Determine in what cases x^n-y^n is divisible without remainder by $x+y$ and $x-y$.

Find the value of $\dfrac{\sqrt{ab}-2}{\sqrt{b^3-7a^2}}$ where $a=2$, $b=8$.

3. Solve the equations:

$$\text{(i)}\ x^4+\frac{1}{x^4}=\tfrac{6}{8}\tfrac{5}{8};\quad \text{(ii)}\ x^2+19x-70=0.$$

$$\text{(iii)}\ 2x+4y+3z=28,\ x+y=3z-7,\ y+z=3x+1.$$

4. If 2 be added to a certain number, and the result be squared, the final result is 4 times the number increased by 68.

5. Solve the equations:

$$\text{(i)}\ (x+1)(x+2)(x+3)+(x+2)(x+3)(x+4)=2(x+3)(x+4)(x+5)-72x.$$

$$\text{(ii)}\ x^2+2abx+b^2+2a\sqrt{x^2+4abx+b^2}=b^2x^2.$$

6. A and B begin trade, A with 4 times as much capital as B. A gains £50 and B loses £30, and their capitals are then in the ratio 5 : 1. Find the original capital of each.

7. Sum the series:

$$\text{(i)}\ -\tfrac{1}{4}+\tfrac{3}{4}+\tfrac{7}{4}+\ldots \text{ to 24 terms};$$

$$\text{(ii)}\ 4+x+\frac{x^2}{4}+\frac{x^3}{16}+\ldots \text{ to 12 terms.}$$

8. Prove that the geometrical mean of two numbers lies in value between the arithmetical and the harmonical mean.

Find the arithmetical, geometrical, and harmonical mean between $\frac{2a}{a+b}$ and $\frac{2a}{a-b}$.

9. Prove that a ratio of greater inequality is decreased if the same quantity be added to both terms of the ratio.

If $a:b::c:d::e:f$, prove that $\frac{a}{b}=\frac{a+c-e}{b+d-f}=\frac{\sqrt{a^2+c^2+e^2}}{\sqrt{b^2+d^2+f^2}}$.

10. Prove the binomial theorem for a positive fractional exponent. Shew that in the expansion of $(1+x)^n$ the coefficient of the rth term from the beginning is equal to the coefficient of the rth term from the end.

11. Transform 14235231 from the scale whose radix is 6 to the scale whose radix is 12.

12. In what form must a quantity be expressed in order to be fitted for logarithmic calculation?

Express $(a^2+b^2)^2-(a^2-b^2)^2-(a^2+b^2-c^2)^2$ in such a form.

13. Find the numerically greatest term in the expansion of $(1+5x^2)^5$.

14. Prove that a solution of the equation $ax+by=c$ in positive integers can always be found.

15. Prove that each successive convergent approaches more nearly to the value of the continued fraction $a+\frac{1}{b}+\frac{1}{c}+\frac{1}{d}$.

Reduce $\frac{15}{27}\frac{7}{23}\frac{6}{3}$ to a continued fraction.

16. How many committees can be formed out of 24 Conservatives and 17 Liberals, each committee consisting of 4 Conservatives and 3 Liberals?

ANSWERS TO *MARCH* PAPER.

1. (i) $2a^2-b^2+c^2+e^2-f^2$; (ii) $4d(a+b+c)$.
3. (i) $x=3$ or $\frac{5}{6}$; (ii) $x=-10$ or -4; (iii) $x=2$ or -4.
4. (i) $x=13\pm\frac{\sqrt{304}}{\sqrt{3}}$; (ii) $68x^3+75x^2+64x+20=0$.
5. (i) $x^{a+b+c-e-d}$; (ii) $\frac{x^b}{x^b+y^b}$. 6. 75. 9. $\frac{760\times 64^{\frac{2}{3}}}{19+20\times 64^{\frac{2}{3}}}$.
11. $2x^2-3ax+4a^2$. 12. $\sqrt{6}-\sqrt{3}$. 13. $5+6^{\frac{5}{7}}+8^{\frac{5}{7}}+\ldots$
14. Two. 15. 43890×115. 16. 2·653212. 17. 39 shillings.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Prove that:

(i) $\tan(A+B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$;

(ii) $\sin(-A) = -\sin A$;

(iii) $\tan A = \cot(90° - A)$.

2. Express the tangent of an angle in terms of the sine, and explain why there are two values.

3. Trace the changes in sign and magnitude of $\cot\theta - \tan\theta$ as θ varies from 0° to 270°.

4. Prove that in any triangle

$$\tan A + \tan B + \tan C = \tan A \,.\, \tan B \,.\, \tan C.$$

5. Shew that $\tan\dfrac{A}{2} = \dfrac{\sin A}{1+\cos A}$.

6. Find the sum of n terms of the series

$$\sin\alpha + \sin(\alpha+\beta) + \sin(\alpha+2\beta) + \ldots$$

7. Enumerate the mechanical powers and describe the screw.

8. Two parallel forces act in opposite directions; find the magnitude and direction of their resultant.

9. What is meant by the moment of force about a point? Prove that if the forces acting on a body are in equilibrium the sum of their moments about any point is zero.

10. When is a force said to do work, and how is work measured? Define horse-power.

11. A body is projected with a vertical velocity of 14 feet, and a horizontal velocity of ·7 feet; find its distance from the point of projection at the end of 3 seconds, taking $g = 32{\cdot}2$ feet.

12. Two bodies moving in the same direction with velocities 9 feet and 7 feet per second respectively, impinge upon one another, and after impact their velocities are 4 feet and 6 feet respectively; find the index of elasticity.

Higher Mathematics.

Higher Local.

TRIGONOMETRY AND CONICS.

1. Shew that the area of a triangle is $\frac{1}{2}bc\sin A$, or

$$\frac{bc\cos\frac{A}{2}+ac\cos\frac{B}{2}+ab\cos\frac{C}{2}}{\operatorname{cosec}\frac{A}{2}+\operatorname{cosec}\frac{B}{2}+\operatorname{cosec}\frac{C}{2}}.$$

2. Prove the following formulæ:

$$\text{(i) } r_a=\frac{S}{s-a};\quad \text{(ii) } R=\frac{a}{2\sin\frac{\pi}{n}},$$

r_a being radius of escribed circle and R radius of circle circumscribing a polygon of n sides.

3. A man at a certain distance from a building observes that it subtends an angle of 45°. He walks 100 ft. towards the building, and then observes that it subtends an angle of 30°. Find the height of the building and the distance from it of the first post of observation.

4. For what value of θ is $\sin\theta+\cos\theta$ positive?

5. Prove De Moivre's Theorem for a positive integer.

Find the nth roots of $a+b\sqrt{-1}$.

6. Find the equation to the tangent to the hyperbola referred to the asymptotes as axes.

7. Find the equation to the straight line which is perpendicular to $lx+my=d$ and passes through the point (l, m).

8. Find the equation to the straight line which passes through the intersection of two circles which cut each other, and investigate its geometrical meaning.

9. Find the locus of the middle points of the parallel chords to a parabola.

10. If the tangent to the hyperbola at any point P meet the directrix in the point Z, and if S be the focus corresponding to the directrix on which Z is situated, then SZ will be at right angles to SP.

11. If two chords of a hyperbola intersect one another, the rectangles contained by their segments are proportional to the squares of the diameters parallel to them.

Higher Mathematics.

Higher Local.

STATICS, DYNAMICS, ASTRONOMY.

1. Describe the differential axle and Hunter's screw, and find the mechanical advantage gained in each.

2. If P be the resultant of two forces L and M which act upon a particle, and Q be the resultant of M and P, find the resultant of Q and P.

3. Find the centre of gravity of the figure formed by placing an isosceles triangle upon a rhombus in such a manner that one of the equal sides of the triangle coincides with one of the sides of the rhombus.

4. Describe the wedge. A wedge is in the form of an isosceles triangle, and two of the forces are 24 lb. each; find the third force.

5. A particle is projected vertically upwards with a velocity of 80 ft. per second; find its height at the end of 5 seconds, and the time when it is at a height of 130 ft. above the point of projection.

6. A body moving from rest is observed to move over 52 ft. and 65 ft. respectively in two consecutive seconds; find the acceleration and the number of seconds in which the body moved 52 ft.

7. If f be the unit of acceleration when 4 secs. is the unit of time and 3 ft. the unit of length, find the unit of acceleration when 5 secs. is unit of time and 4 ft. is unit of length.

8. Two particles are let fall from heights of 66 ft. and 84 ft. respectively, and they reach the ground at the same instant; find the interval which elapsed between their starting.

9. Describe the path of Mars as seen from the earth, and account for its looped appearance.

10. Describe the transit instrument, and say for what it is used in astronomical observations.

11. The difference between a lunation in January (when the earth is nearest the sun) and in July (when it is farthest) has been observed to be 35 minutes. What explanation can be given of this fact?

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (a), (b), (c), (d). Senior Students will only be examined in (a), (b), and one of the subjects (c), (d), (e).

(*a*)

1. In what three forms does carbon occur? What is (i) marsh gas, (ii) carbonic acid gas? State their properties and principal natural sources.

2. What are the properties of chlorine? How does it act on powdered antimony? What is the process by which it is useful as a bleaching agent?

3. Describe the allotropic modifications of sulphur. What is oil of vitriol? Give examples of the purposes for which it is used in large quantities.

(*b*)

4. How can you prepare carbon dioxide and sulphuretted hydrogen? By what characters can they be recognised?

5. What gas is set free when hydrochloric acid is heated with manganic dioxide? How is hydrochloric acid prepared? Give equations.

(*c*)

6. What weight will be sustained by a horizontal force of 100 lb. on an inclined plane rising 3 in 20.

7. The radius of the axle in a simple wheel and axle is 2 in., what must be the radius of the wheel if P be 10 when W is 160?

8. What are the conditions under which a body will float in water? How do these affect the structure of boats?

9. Find the pressure upon a rectangular plane, 12 in. by 5 in., when immersed in water, so that its centre of gravity is at a depth of 24 in.

(*d*)

10. Explain the terms *conservation of energy, potential energy, visible energy.* Give instances of each. Mention a proof of the indestructibility of force.

11. Indicate the three ways in which heat may be conveyed. Give illustrations of each. Define the thermal conductivity of a substance.

12. Give evidences of the existence of heat at great depths within the earth, and quote a few hypotheses which have been proposed to account for it.

(*e*)

13. What is the cause of lightning? On what principle does a lightning conductor act, and what considerations have to be taken into account before placing one on a building?

14. Why should a magnetic battery be more powerful when made of thin bars than a solid one of the same weight and size?

15. Classify some of the effects of the galvanic current. Give instances of the practical application of the same.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Describe the cellular modifications found in the stem of a dicotyledon.

2. What is a *stoma* and a *trichome*? What various forms does the latter present?

3. Give instances of plants which have tendrils, spines, phyllodes, or cladodes. Explain in each case the morphological value of these members.

4. Describe fully, from specimens only, the leaves of grass, plantain, poplar, primrose, geranium, rose, and wood-sorrel.

(*b*)

1. Describe, as far as you are acquainted with it, the anatomy of an earth-worm, laying stress on those characters which are distinctive of the sub-kingdom to which it belongs.

2. Which are the simplest kinds of worms? By what organs can you trace their relation to echinoderms?

3. What modes of locomotion are found in the sub-kingdom vermes?

4. Describe the members of this sub-kingdom which are useful to man, and especially the structure of their mouths.

(*c*)

1. What are the causes of the variations in the pressure of the atmosphere? Explain the origin of wind.

2. Describe the Trade Winds and Monsoons, stating the causes which give rise to them.

3. Explain the structures: cleavage, foliation, and joints. What is false-bedding, and how has it been caused?

4. What common minerals come under the head of silica? How can you distinguish quartz from calc spar, and felspar from gypsum? What minerals make up the following rocks? granite, syenite, and diorite.

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. Distinguish between crystalloids and colloids, and explain the process of dialysis.

2. Explain the term *allotropism*, illustrating its meaning by reference to sulphur, carbon, and phosphorus. What does *dimorphic* mean? Give examples.

3. If an object be placed 10 in. from a convex lens, of which the focal length is 12 in., find the position of the image.

4. Account for each fraction of a broken magnet being a perfect magnet.

Explain Ampère's magnetic theory, also the two-fluid theory.

5. Describe carefully the structure and form of a hydra. How are hydræ generated? Under what circumstances have you examined one?

6. Explain what is meant by the expressions: "The lobster and crayfish are bilaterally symmetrical;" "Inspiration is effected in a frog by a buccal force pump;" "The actions of the different parts of the organism of the frog are co-ordinated with one another and brought into relation with the external world by means of the muscular and nervous systems and the organs of sense."

(*b*)

1. Describe a test for arsenic. How are (i) white arsenic, (ii) metallic arsenic obtained? By what tests can an arseniate be distinguished from a phosphate?

2. What are the oxides of phosphorus, and how are they prepared? Give the formula for bone ash and its reaction with dilute sulphuric acid.

3. In what combinations do lead, tin, copper, and silver occur in nature? How are they each extracted from their ores? How can you severally detect them in solutions?

4. Give the formulæ for the oxides of iron, mercury, copper, and tin.

How can the ferrous and ferric salts be distinguished?

(*c*)

1. A particle moves from rest with uniform accelerating force f over space s, and acquires a velocity v. Fnd an equation connecting s, f, and v.

2. Given an electrified body, how would you ascertain if it were charged with positive or negative electricity? Why is repulsion a surer test than attraction?

3. Explain the terms, *line of force* and *induced current.* Upon what does the strength of an induced current depend, and what determines its direction?

4. Describe fully Ruhmkorff's induction coil, a Wollaston's cell and a Grove's cell, indicating the differences between the two.

(*d*)

1. Tabulate, with examples, the chief modes of reproduction met with amongst thallophytes.

2. Give the structure of marchantia.

3. Contrast briefly the oophore of the moss fern, and selaginella.

4. Explain the use of the term *alternation of generations.*

(*e*)

1. Give an account of the skull (with special reference to the structure of the jaws) of venemous snakes, and compare it with that of non-venemous.

2. Describe the various kinds of epidermic exo-skeletons found

in sauropsida, noting particularly tortoise-shell and the development of feathers.

3. What distinguishes the lungs of a bird from those of a mammal? Describe the arrangement of the chief air sacs in a typical bird.

4. Describe: (i) the digestive system of a bird; (ii) the special arrangements for forming the voice of a bird; (iii) the three forms of heart found in sauropsida.

(*f*)

1. Shew how the afferent nerves, conveying the sensations of feeling and touch, differ from all others. Distinguish between tactile sensations, tactile perceptions, and muscular sensations.

2. Describe the general structure of the ear in detail, and the microscopic structure of the organ of corti.

3. Explain, as far as you know, the manner in which a sound, as for instance a note struck on the piano, is conveyed to the brain.

4. Give briefly an account of the sensations of smell and taste, and the organs specialised for their use.

(*g*)

1. On what grounds do we consider that the interior of the earth possesses a very high temperature?

2. Write a list of the chief sub-divisions of the carboniferous formation. Give an account of the general distribution of land and sea over the British area during the carboniferous limestone times, accounting for the greater development of the limestone in the south than in the north.

3. Give the succession of the Jurassic beds in Gloucestershire, and shew how the beds change in passing across England to Yorkshire.

4. Enumerate the freshwater beds in England, stating by what fossils they are known to be so.

5. Under what different conditions are the materials which form conglomerates, clays, and sandstones originally deposited?

Logic.

Higher Local.

1. What are progressive effects? Give examples of cases of progressive effects, (i) whose cause, though permanent, is not variable, and (ii) whose permanent cause undergoes a progressive change.

Explain the difference between *remote* and *proximate* causes.

2. Define *chance*, and explain what is meant by *an even chance*. How may we determine whether any given conjunction of phenomena is casual or the result of some law?

3. What is the nature of a derivative law? Shew what relation derivative laws bear to empirical laws.

4. What evidence have we of the truth of the law of causation, and by what method of induction is this law proved?

5. How is the existence of anything established? Discuss Locke's position that reasoning is nothing but the comparison of two ideas through the medium of a third, and knowledge the perception of the agreement or disagreement of two ideas.

6. When are you justified in disbelieving any given assertion? Upon what arguments does Hume found his disbelief in miracles? Examine whether his views are in accordance with the canon of disbelief.

7. Distinguish between *observation* and *inference*. What do we mean when we say that our senses deceive us?

8. What is meant by a general notion? Explain the terms *appropriate*, *clear*, and *complete* as applied to conceptions.

9. Discuss the question whether conceptions develop themselves from within the mind, or are impressed upon the mind from without, mentioning the views of any logicians upon this matter.

10. What are the two principal requisites of a philosophical language? Explain the difference between terminology and nomenclature.

Constitutional History.

SPECIAL PERIOD, 1295—1297; GENERAL PERIOD, 1603—1685.

Higher Local.

1. Trace briefly the circumstances which led to the Confirmatio Chartarum. Estimate its constitutional importance.

2. Sketch the system of local government during this period (1199—1307).

3. Group A Paper, page 15, Question 10.

4. Give the history of the Star Chamber and High Commission Courts.

5. Enumerate the principal measures of the Long Parliament before the outbreak of the war. How far do you consider them (i) constitutional, (ii) justifiable?

6. Give a brief account of the trials of (i) Lord Bacon, (ii) Strafford, (iii) Clarendon, (iv) Danby.

Political Economy.

Higher Local.

1. Discuss the wages-fund theory, and explain the theory which has taken its place.

2. Give a short account of the principal Corn Laws which have been passed in England at various times. What do you consider was the immediate result of the repeal of the Corn Laws, and how do you account for that result? What do you consider will probably be the ultimate result of the repeal (i) to England, and (ii) to the rest of the world?

3. What are the special difficulties of a political economist as regards the terms of his science? What are the principles which should guide him in his definitions of economic terms?

4. What are the probable, and what the possible disadvantages which may result from the use of an inconvertible paper currency? Mention any countries where such a currency is in use.

5. Write an essay on one of the following subjects:

(i) "Reciprocity."

(ii) "The importance of a high standard of comfort, and the means which have been suggested to obtain and retain a high standard."

(iii) "Apprenticeship, its value to apprentices, and to the whole community."

(iv) "Time-wages versus task-wages."

6. What are Mill's four grades of labour? Do you think they will always exist?

7. Senior Paper. No. 7.

8. Senior Paper, No. 8.

Political Economy.

Senior.

1. What are the functions of money? In what way is the use of money more convenient than barter?

2. Give a short history of our currency, and explain why various changes have taken place in it.

Describe in detail our present currency, and point out its advantages.

3. Mention some of the substances which have been used as money at various times, and explain why metals were chiefly used.

4. Define *price*. Shew the effect of demand and supply on prices, and also the connexion between cost of production and prices.

5. What qualities must a commodity possess in order to have an exchange value? Give several examples.

6. "Value of money is ambiguous." Explain this, and point out what determines "the value of money," using that term in its most correct sense.

7. What is the relation between profits and prices?

8. Define *market, buyer, seller, final utility, normal value.*

Music.

Junior and Senior.

1. How does *compound* differ from *simple* time? Give, at least, one example of the compound forms of duple, triple, and quadruple time.

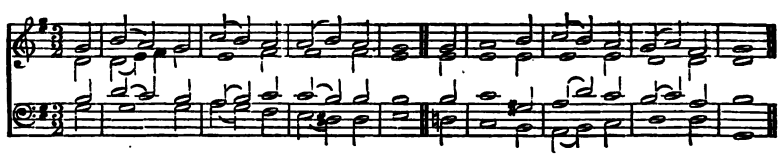
2. Write one octave (ascending) of all the major scales, placing them in order according to the number of flats or sharps they contain. Mark the position of the semitones.

3. Which note of a major scale is the key-note of its relative minor?

4. (i) If a minor scale were written from that note consisting of exactly the same sounds as its relative major, where would semitones occur?

(ii) In what would the incorrectness of such a scale consist as compared with scales in use at the present time?

5. Write the following in vocal score, using the soprano, alto, tenor, and bass staves:



6. Define *accent*, and say where accents should occur in duple, triple, and quadruple time.

If an accent were required at any other part of the bar, how could it be indicated?

7. Shew, by writing the examples in full, how the signs in the following should be rendered:

For Senior Students only.

8. Write a short account of the lives of Bach and Handel, and give the names of their most important works.

Music.

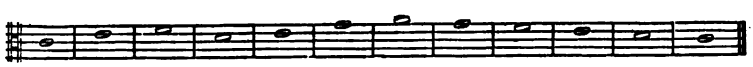
Higher Local.

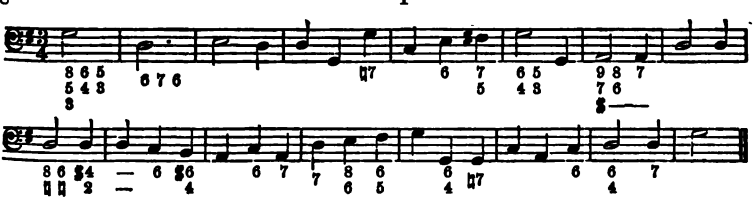
1. Describe the *Rondo* form, and say for what it is most frequently used. Give one or two well-known examples of Rondos which do not form part of larger compositions.

2. Analyse the first movement of Mozart's Sonata in C major (No. 15, Peters' Edition), referring to the number of the bars. Point out the modulations that occur besides giving a detailed description of the form.

Say in what forms the remaining movements of the Sonata are written.

3. Write counterpoint of the first species in four parts to the following *canto fermo*, placing it alternately in all the parts:



4. Harmonise the following in four parts, and write the ground-notes below the bass on a separate stave:

For Candidates for Classes I. and II. only.

5. (i) Explain the construction and action of the Syren. Say what acoustical law it exemplifies, and how.

(ii) What is meant by the *vibration-number* of a sound?

(iii) Give reasons why accuracy of relative pitch should be considered more important than that of absolute pitch, and shew in what way our tonal system is a recognition of this principle.

(iv) Give the vibration-numbers of every degree of a major and minor scale, the vibration-number of whose tonic is 440.

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Work of Pestalozzi.*

1. What is unconscious cerebration? Give some examples of its action.

2. In what subjects of instruction is it most necessary that the teaching should be supplemented by the use of good text books?

3. What should be the chief aim in teaching English literature? What method of teaching would you adopt in teaching a play of Shakespeare with a class? What should the pupil be able to do when he has what is called perfect possession of the play?

4. What is Milton's definition of education given in his Tractate on Education addressed to Hartlib?

5. From what point of view did Rousseau regard the education of girls?

6. What directions does Locke give about the teaching of English composition? What does he say about Latin theme and verse writing?

7. Mention some points in which the practice of Pestalozzi was inconsistent with his theories of education. What was the probable cause of much of the difficulty which he met with in working with others?

8. Discuss the moral effect of sound intellectual teaching on the character of pupils.

9. Distinguish between what should be given to the pupils in a good object lesson, and what should not be given them.

10. By what means may the evils connected with examinations in certain cases be best guarded against?

11. What is your idea as to the best method of inspecting a class of pupils so as to get a clear idea of their progress in their work and their state of discipline?

12. What kind of registration of progress, conduct, and attendance would you think to be the best for school purposes? Draw up a tabular form in which the results might be set down to send to the parents at the end of the term.

Editorial.

We have to express our very great regret for the mistake in the sequence of the pages in our March number. As we knew it would be a great inconvenience to our students if our issue were delayed, we felt they would rather pardon the error than the loss of time which a re-issue would entail.

Higher Local students are reminded that the Forms of Entry duly filled up and signed and the Examination fees must be sent to the Local Secretary of the place at which the candidate desires to be examined on or before April 20th.

As several students seem in doubt as to the centres for the Examination and the addresses of the Local Secretary, we subjoin the list:

Birmingham .....Rev. E. F. MacCarthy (men), King Edward's School.
Mrs. Sargant, 1, Rotten Park Road, Edgbaston.
Brighton.....Mrs. Henry Martin, 5, Powys Square.
Barclay Phillips, Esq., 75, Lansdowne Place.
Bristol .....Mrs. Marshall, 31, Apsley Road, Clifton.
Miss Edith Wilson, School House, Clifton College.
Cambridge .....Miss J. Kennedy, The Elms, Brookside.
Cheltenham.....Mrs. Fenn, Christ Church Lodge.
Chichester .....Mrs. Durnford, The Palace.
Ealing.....Miss Edwards, St. Vincent's Lodge, Hanwell, W.
Eton .....Rev. E. Hale, The College.
Falmouth ....Mrs. Howard Fox, Rosehill.
Leeds .....Mrs. Stephen Marshall, Westwood Hall.
Liverpool .....Miss Calder, 49, Canning Street.
London and its neighbourhood:
Hampstead.....Mrs. Arthur Wilson, Elm Lodge, Hampstead Heath, N.W.
Main Centre .....R. St. J. Corbet, Esq. (men), 10, Portman Street, W.
Ditto, South West...Miss Prideaux, Goldsmiths' Hall, E.C.
Ditto, West .....Miss Kensington, 22, Gloucester Place, Hyde Park, W.
Sydenham .....Mrs. Hardwicke, Literary Department, Crystal Palace.
Manchester.....Mrs. Donner, Victoria Park.
Hon. Mrs. Atkinson, Longsight.
Middlesbro' .....R. L. Kirby, Esq., Linthorpe.
Mrs. Taylor, West Newlands.
Newcastle-on-Tyne ...Mrs. Christopherson, The Grammar School.
Newcastle, Staffs. .....Mrs. Kitchener, School House.
Northumberland .....Miss Carr, Dunstan Hill, Gateshead.

Norwich .....Mrs. H. M. Crowther, Sunnyside, Albemarle Road.
Nottingham .....Mrs. H. A. Morley, Sherwood Rise.
Plymouth .....Miss James, 2, Woodside.
Rugby .....Mrs. H. Lee Warner.
Sheffield .....Miss Keeling, 267, Glossop Road.
Southport .....Miss Ryley, Grosvenor Road, Kirkdale.
Teignmouth.....Mrs. Metcalfe, The Vicarage, West Teignmouth.
Weston-super-Mare ...S. G. Bucknall, Esq., The Boulevards.
Winchester .....Miss Davids, 8, St. Peter's Street.
Wolverhampton .....Miss Mander, The Mount.
York .....Miss Swaine, 1, The Crescent.

The pressure of extra examination work at the end of the Spring Term has prevented our examining the March answers before going to press. We should be glad if Higher Local students would each work one or more of the April papers as unseen and unprepared examinations.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. Upon what member of the house of Ahab was the curse especially to fall? Give the reason of this. What curse had been pronounced against the house of Baasha?

2. Relate the circumstances which attended Jehu's entry into Jezreel. What thought probably occupied Joram's mind when he asked the question, "Is it peace?"

3. Who was the husband of Jehosheba? How was it that Joash was hidden in the house of the Lord?

(*b*)

4. Herod was by profession a Sadducee. What observation made by him was inconsistent with that fact?

5. What reasons are there for thinking it probable that John the Baptist was confined in the castle of Machærus? Give some particulars about Herod's brother Philip.

6. Give a better translation of the word rendered *by and by*, also of *executioner*, and (chap. vii.) of *tables*. Give the derivation of the word *charger*.

(*c*)

7. Give an instance of St. Paul having been imprisoned before the date of this epistle. On what occasion had he been beaten?

8. Give the literal interpretation of *watchings*. What is meant by the armour of righteousness *on the right hand and on the left*?

9. What is the meaning of the passage, "henceforth know we no man after the flesh" (see Gal. iii. 28).

10. Quote the contrasts used by St. Paul as illustrating the difference between the idea that was formed of him by others, and the facts of which he was conscious.

(*d*)

11. "The Lord and Giver of life." Give passages from Scripture in illustration and support of this statement.

12. What is the original word translated *Church* in the Creed? What is meant by the term *catholic*?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (a), (b), (c), (d), (e).

(*a*)

1. How did Jehu illustrate his words, "Ahab served Baal a little, but Jehu shall serve him much"? What was his real purpose?

2. What is the meaning of the following phrases?

(i) "The Lord began to cut Israel short."

(ii) "You that go forth on the Sabbath."

3. What is the correct rendering of this passage? "She *painted her face*." What was the significance of the act of giving the hand to another? (Chap. x. 15.)

4. Junior Paper, Nos. 2 and 3.

(*b*)

5. Draw a section of a map of the Lake of Galilee, illustrating the route taken when "they departed into a desert place," and that taken by the people who "ran afoot thither .... and outwent them" (chap. vi. 32, 33). What town was situated near this "desert place"?

6. What was the real meaning of the objection that the disciples ate with "unwashen hands"? Why did St. Mark comment on this custom?

7. What differences do we note between the accounts of the feeding of the five thousand and the feeding of the four thousand?

(*c*)

8. How does the Apostle work out the idea of the antagonism of the two principles of life and death, and also the further idea that life is the outcome of death? Illustrate the latter idea from the natural world.

9. Deduce the exact meaning of the word *sight* as used in chap. v. 7 from Luke iii. 22, ix. 29, John v. 37, where the same word is differently translated.

(*d*)

10. What ceremonies were associated with the rite of Confirmation after the second and third centuries? Which of them are retained?

(*e*)

11. Discuss the question as to whom the Epistle to the Ephesians was really addressed.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS XLII.—LXXII. II. NEW TESTAMENT: ST. LUKE; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) HOOKER'S ECCLES. POL. V. 50—68; (*b*) PALEY'S HORÆ PAULINÆ, 1 AND 6—16.

I.

1. Describe the structure of the Psalter. Shew the distinctive features of Book II., and account, as far as you can, for the peculiar influence exercised by the Psalms through all ages of the Church.

2. "For thy sake are we killed all the day long; we are counted as sheep for the slaughter." Compare the spirit of these words as they stand in the Psalter, and as used by St. Paul.

3. It is said that the Psalter shews:

(i) Stern contempt of the sacrificial system.

(ii) Exaltation of the moral law over the ceremonial.

Illustrate these statements from Book II.

4. Explain the following passages:

(i) "Against Thee only have I sinned."

(ii) "Like sheep they are laid in the grave: death shall feed on them."

(iii) "Purge me with hyssop and I shall be clean."

(iv) "Put Thou my tears into Thy bottle."

(v) "Thou hast led captivity captive."

5. State very clearly the parts in the work of Restoration carried out respectively by Zerubbabel, Ezra, Nehemiah.

II.

6. Describe the geographical and political position of Ephesus, and give some account of St. Paul's two visits there.

7. On what grounds is this Epistle thought to be encyclical? What internal evidence is there as to the date and place from which it was written?

8. Into what two main divisions does the Epistle to the Ephesians fall? Give a brief analysis of the argument worked out in Part I., and shew what difficulties likely to arise in men's minds are met by its teaching.

9. Comment on the following quotations:

(i) "Be ye angry and sin not."

(ii) "He saith, Awake, thou that sleepest."

(iii) "Redeeming the time because the days are evil."

(iv) "The Father of lights with whom is no variableness, neither shadow of turning."

(v) "Can faith save him?"

10. What was the condition of the Church at the time St. James wrote? What social evils is his Epistle designed to correct?

11. At what date was the Epistle of St. James received into the Canon? How may we account for the fact that it was some time before it gained acceptance by the Church generally?

12. How is the character of Abraham dwelt upon respectively by St. Paul in writing to the Galatians and by St. James?

III. (*a*)

13. What was the teaching of Zwinglius and Œcolampadius with regard to the Holy Eucharist?

14. "Interrogatories proposed in Baptism they condemn as foolish, toyish, and profane mockery." How does Hooker justify the practice of the English Church in this matter?

15. "Many things exclude from the kingdom of God, although from the Church they separate not." Discuss this, and shew clearly in what sense Hooker uses the term *Church*.

16. "We participate Christ partly by imputation, partly by habitual and real infusion." "Nothing but faith is necessary for the attainment of all grace." Comment very carefully on the passages in which these quotations occur.

(*b*)

17. Give the full title of the *Horæ Paulinæ*, and state exactly Paley's object in writing it. Mention any other works of a similar nature.

18. On what points is the First Epistle to the Thessalonians confirmed by the Acts?

19. Granting that St. Paul's letters are genuine, what confirmation of the Christian religion do they afford?

20. Which of the subscriptions are open to dispute? On what grounds and in what manner may they be corrected?

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Suggest any reasons which may account for Ireland being always ready to receive any claimant to the throne in the reign of Henry VII., and being in a constant state of anarchy during that of Henry VIII.

2. Senior Paper, No. 3.

3. Senior Paper, No. 4.

4. Give the dates and conditions of the Peace of Cressy, and Peace of Boulogne. Describe the engagement at Solway Moor, giving its date.

5. What arrangements did Henry VIII. make for the carrying on of the government after his death? Were they strictly adhered to?

(*b*)

6. On what grounds did Edward III. base his claim to the French throne? Shew by a genealogical table the descent of Edward and the other claimants, and state which was elected.

7. Describe briefly the course of Edward's French wars, giving the dates of the most important events.

8. Senior Paper, No. 9.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Explain the terms: plateau, geyser, roads, archipelago, pampas, bight, channel, canal, stream. Give two examples of the use of each.

2. Describe shortly the most important features of (i) the Scandinavian peninsula; (ii) Africa, south of the Orange river.

3. Senior Paper, No. 3.

4. In an outline map of Turkey in Europe and Greece, enter all political divisions, mountains, rivers, and lakes, with their names, also twelve towns in Turkey and six in Greece.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. What were the immediate circumstances which induced Paul III. to issue a bull of deposition of Henry in 1536?

2. Give a short account of the troubles in Ireland between 1520 and 1535.

3. What were the sources of the discontent of both nobles and peasants which found expression in the insurrections of 1536 and 1537? Describe the Pilgrimage of Grace.

4. Shew the feeling of the King, of Cromwell, and of the majority of the nobles towards the Bill of the Six Articles. When was it passed? Give the Six Articles.

5. Account for Henry being at war with France from 1544 to 1546, and for Scotland being included in the Peace of Boulogne which terminated the struggle.

6. Junior Paper, No. 5.

(*b*)

7. Junior Paper, No. 6.

8. Give a short account of the causes which led to the Peasant Revolt, also a description of its course and its results. Give the date and conditions of the Statute of Labourers.

9. What were the chief faults of Richard II.'s reign? Shew the claim of Henry IV. to the throne, and discuss the justice of the deposition of Richard.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Name the different races of mankind which inhabit Europe and Africa, noting the most marked peculiarities of each, and mentioning the localities in which they respectively predominate.

2. Junior Paper, No. 2.

3. Name the countries which bound the Austrian Empire, and the countries which are included. Give their respective capitals. What is the government of Hungary?

4. Junior Paper, No. 4.

English History.

Higher Local.

(*a*) GENERAL; (*b*) SPECIAL, 1509—1625.

(*a*)

1. When did the Danish invasions of England begin? State briefly what is meant by (i) the First Danish Struggle, (ii) the Subjugation of the Danelagn; (iii) the Pacification of Edgar.

2. Give a brief outline of the events of the reign of John, shewing how the signing of Magna Charta was brought about. Give a summary of the contents of Magna Charta.

3. Give a sketch of the French wars of Henry V., with a detailed account of the Battle of Agincourt.

4. Write a short life of (i) Laud, (ii) Strafford. What is meant by the policy of Thorough? What were the main points in dispute between Charles and his parliament at the beginning of the civil war?

(*b*)

5. Shew, by genealogical table or otherwise, the descent of Henry VIII. from (i) Lionel, Duke of Clarence, (ii) John of Gaunt, (iii) Edmund, Duke of York.

6. Give an account of the Battle of Flodden.

7. "The Reformation is not to be regarded as a great and sudden event . . . It was merely the crisis to which things had been tending for centuries."—BLUNT. Illustrate this statement with reference to the Reformation in England.

8. Write a history of the life and policy of Wolsey.

9. Trace the rise and progress of Protestant dissenters during this period.

10. What circumstances led to the fall of Essex? Can you account for the fact that the Queen did not spare his life?

11. Give an outline of the history of Ireland during this period.

12. Examine the nature of the relations between James I. and his various parliaments.

English Literature.

Junior.

KING RICHARD II.

1. Give the derivation of the following words, *occident, perus'd, hermit;* and explain the following words and phrases taken from Act III. Sc. iii.: to ear; torn their souls; common trade make a leg; base court; dangerous treason; words of sooth; barbed; belike.

2. Give the context of the following lines:

(i) "Which on thy royal party granted once."

(ii) "He is come to ope."

(iii) "God pardon all oaths that are broke to me."

3. "With mine own tears I wash away my balm." Quote another passage from this play in which Richard makes a statement in opposition to this one.

4. Give the passages of Scripture alluded to in Act IV. Sc. i. 144, 145. Who spoke these words? What became of him?

5. Explain the phrases, "Me rather had," "My wretchedness unto a row of pins."

6. Senior Paper, No. 7.

English Grammar.

1. What verb is the only one in English which has a separate form when the subject is in the plural?

2. How is the infinitive used in the following sentences?

(i) Water to drink.

(ii) Paper to write with.

(iii) To walk is healthy.

(iv) I am come to see you.

Recast these sentences, using equivalents for the infinitive in each case.

3. Analyse and parse the words in italics in the following:

"Oh, *what pity* is *it,*
That he hath *not so* trimm'd and *dressed* his *land*
As *we this garden.*"

English Literature.

Senior.

KING RICHARD II.

1. Explain the following, *knots, pale* (noun), *rubs* (noun), *manual seal.* Account for our having the two forms of *apricock* and *apricot* in English.

2. Give instances from Act III. of play upon words. Give a short account of the events that occur in this act.

3. What part is taken by the Bishop of Carlisle in this play?

4. Quote the parallel which the gardener draws between the government of the king and the care of a garden.

5. What act is represented in this play as the starting-point of the events which led to Richard's fall?

6. Which of the speakers in this play may be regarded as specially setting forth the spirit of the nation in relation to Richard's course of action?

7. Paraphrase, Act III. Sc. iii. 72—90.

English Grammar.

1. What were the original meanings of the following prepositions? *by, to, till, off, of, at.*

2. Parse the word *the* where it occurs in the following sentence: "the nearer the bone the sweeter the meat."

3. When is *that* preferred to *who* or *which* in composition?

4. Junior Paper, No. 3.

5. Junior Paper, No. 2.

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CÆSAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. (i) From what sources did Spenser draw the materials for his *Faery Queene*? (ii) Describe the Spenserian stanza.

2. When was the *Faery Queene* first published? Why was it well received at first and less appreciated afterwards?

3. (i) Give the general plot of the *Faery Queene*. (ii) Sketch the outline of the story in Book I.

4. Derive and explain in the Spenserian sense: *lin, agraste, amate, avale, bains, bauldrick, bever, bugle, centonell, chaunticlere, divide, stye, emboss, graine, mister.*

(*b*)

5. What was the source from whence Shakespeare drew the plot of *Julius Cæsar*? Mention the historical inaccuracies and the anachronisms to be found in it.

6. "He hears no music." Of whom is this said? Give the context. What was Shakespeare's feeling about music? In what other plays is it brought prominently forward?

7. Paraphrase and comment on Brutus's soliloquy in the orchard (Act II. Sc. i.).

8. (i) "I am constant as the Northern star." Who says this, and on what occasion? Give the context.

(ii) What metaphor was used by Brutus to induce Cassius to lead the army on towards Philippi?

9. Scan, and give the context of these lines:

(i) "The old Anchises bear so from the waves of Tiber."

(ii) "My mortified spirit now bid me run."

(iii) "We shall be called purgers, not murderers."

(iv) "Fearing to strengthen that impatience."

(v) "None that I know will be much that I fear may chance."

(vi) "Let me see, let me see, is not the leaf turned down?"

(c)

10. What three classes of men have brought discredit on learning, and from what causes?

11. What are the discredits of learning arising from errors and vanities in the studies themselves?

12. From what remarks in the *Advancement of Learning* would you infer that Bacon is discontented with the old or "deductive" method of seeking knowledge, and is about to suggest another method? What is the Baconian method, and in what work is it set forth?

13. Shew that the "pleasure of learning surpasseth all other," and support this assertion by a quotation from a Latin poet. What meaning does Bacon appear to attach to the word *learning*?

14. Explain the allusions to *Hermes, Faustina, Lucretia, Hecuba, Helena.* Who was Du Bartas?

15. Name the authors of the following works: *Tamburlaine; Duchess of Malfi; Steel Glass; Looking Glass for London; Apologie for Poetry; Poetaster.* Give a short account of each.

16. Write an essay on one of the following subjects:

(i) The growth and rise of the English drama.

(ii) Prose and Poetry. What do these terms mean, and in what do they differ? Why was English prose literature of later growth than English poetry?

17. What are the laws of the sonnet? Who were the chief sonnet writers in the Elizabethan period?

English Language.

ANGLO-SAXON CHRONICLE, PARKER MS. (EARLE'S EDIT.), ANNALS 925 TO 975; PIERS PLOWMAN, B. TEXT (SKEAT'S EDITION), PASSUS V.

1. Give the whole present indicative, the imperative, and past participle of the verbs *habban, libban,* and *dón.*

2. How many different roots are there in the verb *to be* in Anglo-Saxon? Are they all preserved in the modern English verb? How do you account for the modern plural form, *we are*?

3. Translate (without reference to books):

(i) He that has not, that which it seems to him that he has shall be taken away from him.

(ii) Follow me, and I will make you fishers of men.

(iii) Let us therefore do what is needful for us.

(iv) He forbade that anything should be given in exchange for him.

4. Translate (explaining all difficulties of construction), Parker MS. Annals 937, 942, 962, 973, 975.

Has any suggestion been made as to the possible authorship of these poems?

5. Give briefly the chief laws of alliterative metre, and illustrate your answer by criticising the metre of the first 20 lines of the *Battle of Brunanburh.*

6. Render into modern English, *Piers Plowman,* Passus V., ll. 104—119, 209—218, 241—253, 469—478, 520—531, 598—613.

Parse *lowen,* l. 95; *hailse,* l. 101; *couth,* l. 181; *tene,* l. 432; *seighe,* l. 505; *to paye,* l. 556.

Give the meaning and derivation of *forweny,* l. 35; *pouste,* l. 36; *affaiten,* l. 67; *kourteby,* l. 80; *ympes,* l. 137; *the ik,* l. 228; *hansel,* l. 326; *puttes,* l. 312; *wafrestre,* l. 641.

7. Criticise the language of the following passage, and compare it with that of *Piers Plowman*:

The ferthe day, freis water and se
Sal bren als fir and glouand be.
The fift day, sal greses and tres
Suet blodi deu, that grisli bes.
The sexte day, sal doun falle
Werdes werks, bathe tours and halle.
The seuend day, sal stanes gret
Togider smit and bremly bete.
And al the erthe, the achtande day,
Sal stir and quac and al folc flay.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline the following, giving their gender and meaning: *index, animal, vir, vis, mens, ager, laurus, arbor.*

2. Mention any peculiarities with which you are acquainted in the declension of Greek-nouns in Latin. Give the accusative singular and plural of *Delos, crater, heros, lampas,* and the genitive and dative of *poesis.*

3. Give the imperfect active, indicative and subjunctive, of the following: *habeo, puto, jungo, lavo, volo, possum, fio.*

4. Translate carefully: *in urbem, in oppido, per noctem, ad tempus, ex tempore.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 379—385 and 403—419.

CAESAR, *de Bell. Gall.* III. c. 14.

6. Who were Labienus, the Veneti, P. Crassus, and the Aquitani?

7. Translate into Latin:

(i) The brothers and sisters will stay in the city, but the parents went across the sea.

(ii) Cæsar attacked the enemy when it was day.

(iii) They sent hostages, but the general would not listen to their entreaties.

(iv) Do not attempt to cross the river by night.

(v) Very many men were killed, the rest were taken prisoners, and sold as slaves, with their wives and children.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Mention any peculiarities with which you are acquainted in the declension of Greek-nouns in Latin, and give the accusative singular and plural of *Delos, crater, heros, lampas,* and the genitive and dative of *poesis.*

2. Give the active imperative present and future of the following: *dico, facio, rego, habeo, puto, audio, capio.*

3. Give all the forms in use of the defective verbs, *odi, memini.*

4. Explain the meaning and usage of the *ablative absolute* and the *accusative of respect.* Give illustrations.

5. Translate with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid* II. 379—385 and 403—419.

LIVY, XXI. c. 34.

6. Give a short account of the following: Cassandra, Sinon, Larissaeus Achilles, Ulixes.

7. Translate, if possible without a dictionary:

(i) He ordered ambassadors to be sent to Rome to ask for peace, and offer hostages, but at the same time he made preparations as if for war.

(ii) Philosophy has always been the delight of the wise man in joy, and his consolation in sorrow.

(iii) Hic subitam nigro glomerari pulvere nubem
Prospiciunt Teucri, ac tenebras insurgere campis,
Primus ab adversa conclamat mole Caïcus:
Quis globus, o cives! caligine volvitur atra!
Ferte citi ferrum, date tela, ascendite muros:
Hostis adest, eia!

Latin.

Higher Local.

LIVY I.; HORACE, ODES III.

1. Parse the following: *effundat, dicantur, consulis, velis, lepores.*

2. Translate carefully: *si peccas, doles; si pecces, doleas; si peccares, doleres; si pecasses, doleres.*

3. Distinguish between the usage of *non, ne, haud.*

4. Decline fully the proper names *Peleus, Achilles, Socrates, Pericles.*

5. Translate with short marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

LIVY I. c. 50, §§ 3, 4, 5, 6, from "Turnus Herdonius" to "qui indixerit, observet," and c. 59, §§ 1, 2, 3, from "Brutus illis" to "ac vim queruntur."

HORACE, *Odes* III. XXVII. 1—20, and XXX.

Scan the first two lines of XXVIII.

6. Give a short account, with dates where necessary, of the historical events related in the first book of Livy.

7. Translate, without a dictionary:

Quandocumque igitur nostros mors claudet ocellos,
accipe quae serves funeris acta mei.
nec mea tunc longa spatietur imagine pompa,
nec tuba sit fati vana querela mei,
nec mihi tunc fulcro sternatur lectus eburno,
nec sit in Attalico mors mea nixa toro.

8. Translate into Latin prose:

That system of morality, even in the times when it was powerful and in many respects beneficial, had made it almost as much a duty to hate foreigners as to love fellow-citizens.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully, giving the gender and meaning, the following: *παθώ, ἥρως, ἀνώγεων, ὄρνις, πῆχυς, κλέος.*

2. Explain the formation of Greek adverbs. Give illustrations, and translate *well, badly, carefully, very, beautifully.*

3. Give the first aorist and perfect passive of the indicative mood in the following verbs: *τίνω, λαμβάνω, διδάσκω, λέγω.*

4. Give the rules for the contraction of vowels in Greek verbs, and state in what tenses verbs in *-αω, -εω,* and *-οω* are contracted.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

XENOPHON, *Anabasis,* IV. c. iv., §§ 16, 17, 18, and c. v., §§ 3, 4, 5.

EURIPIDES, *Heracleidae,* 427—438 and 474—483.

6. Give a short account of the following: Cyrus, Teribazus, Cheirisophus, Euphrates.

7. Translate into Greek:

(i) He said he would go if I went.
(ii) He said they were going to Athens.
(iii) I think the book is lost.
(iv) Why, O my mother, do you weep?

8. Translate:

(i) *ὃς γὰρ ἂν ποτίσῃ ὑμᾶς ποτήριον ὕδατος ἐν τῷ ὀνόματί μου, ὅτι Χριστοῦ ἐστε, ἀμὴν λέγω ὑμῖν, οὐ μὴ ἀπολέσῃ τὸν μισθὸν αὐτοῦ.*

(ii) *διόπερ εἰ βρῶμα σκανδαλίζει τὸν ἀδελφόν μοῦ, οὐ μὴ φάγω κρέα εἰς τὸν αἰῶνα, ἵνα μὴ τὸν ἀδελφόν μου σκανδαλίσω.*

Explain the idiom *οὐ μὴ φάγω.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Give the rules for the formation of Greek adverbs, and translate *well, badly, very, carefully, beautifully.*

2. Give all the infinitives, active, passive, and middle of the following verbs: *δείκνυμι, τύπτω, λύω, τίθημι, λαμβάνω, διδάσκω.*

3. Give the rules for the contraction of vowels in Greek verbs, state which tenses are contracted, and give the present infinitive active and passive of *ὁράω, δοκέω,* and *δηλόω.*

4. Translate carefully: *διὰ τῆς γῆς; διὰ σέ; ἐκ τούτου; μετὰ τούτου; μετὰ τοῦτο; ἐπὶ τοῦ ἄκρου; ἐπὶ τὴν πόλιν.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

PLATO, *Apology,* c. xvii., from beginning *ἐγὼ οὖν* to 29 B. *καὶ αἰσχρόν ἐστιν οἶδα,* and c. xix.

EURIPIDES, *Heracleidae,* 427—438 and 474—483.

6. Give an account of the Socratic *διαμόνιον,* mentioning the chief theories which have been suggested in explanation of it.

7. Translate (if possible without a dictionary):

(i) The general assured them that if they were firm and held their ground there would be no danger, and called upon them to shew themselves worthy citizens of Athens the noblest of the Greek states.

(ii) *ξυνέβη τε ἔργον τοῦτο τῶν κατὰ τὸν πόλεμον τόνδε μέγιστον γενέσθαι, δοκεῖν δ' ἔμοιγε καὶ ὧν ἀκοῇ Ἑλληνικῶν ἴσμεν, καὶ τοῖς τε κρατήσασι λαμπρότατον καὶ τοῖς διαφθαρεῖσι δυστυχέστατον.*

8. Translate:

(i) *ὃς γὰρ ἂν ποτίσῃ ὑμᾶς ποτήριον ὕδατος ἐν τῷ ὀνόματί μου, ὅτι Χριστοῦ ἐστε, ἀμὴν λέγω ὑμῖν, οὐ μὴ ἀπολέσῃ τὸν μισθὸν αὐτοῦ.*

(ii) *διόπερ εἰ βρῶμα σκανδαλίζει τὸν ἀδελφόν μου, οὐ μὴ φάγω κρέα εἰς τὸν αἰῶνα, ἵνα μὴ τὸν ἀδελφόν μου σκανδαλίσω.*

Explain the idiom *οὐ μὴ φάγω,* and parse *ἀπολέσῃ, σκανδαλίσω.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; AESCHYLUS, PROMETHEUS VINCTUS.

1. Give all the infinitives, active, passive, and middle, of the following verbs: *τίθημι, δείκνυμι, λαμβάνω, δοκέω, ὁράω, διδάσκω.*

2. Explain what is meant by *relative attraction*, and give illustrations.

3. Comment on any grammatical peculiarities in the following:

(i) *οὐκ ἔστιν ὅτῳ μείζονα μοῖραν*
νείμαιμ' ἢ σοὶ.

(ii) *καὶ νῦν τοὺς ὑπερμήκεις δρόμους*
Ἥρᾳ στυγητὸς πρὸς βίαν γυμνάζεται.

(iii) *χθόνα δ' ἐκ πυθμένων·*
αὐταῖς ῥίζαις πνεῦμα κραδαίνοι.

4. Translate, with marginal notes, explaining fully (i) difficulties of construction, (ii) allusions:

THUCYDIDES, IV. c. 114.

AESCHYLUS, *Prometheus Vinctus*, 944—952 (Paley's text, 965—973) and 1054—1070 (Paley's text, 1071—1091).

5. Give a short account of the following: Brasidas, Cleon, Demosthenes, Perdiccas.

6. Translate (without a dictionary):

ἀλλὰ καὶ ὑμᾶς χρή, ὦ ἀνδρες δικασταί, εὐέλπιδας εἶναι πρὸς τὸν θάνατον, καὶ ἕν τι τοῦτο διανοεῖσθαι ἀληθὲς, ὅτι οὐκ ἔστιν ἀνδρὶ ἀγαθῷ κακὸν οὐδὲν οὔτε ζῶντι οὔτε τελευτήσαντι, οὐδὲ ἀμελεῖται ὑπὸ θεῶν τὰ τούτου πράγματα· οὐδὲ τὰ ἐμὰ νῦν ἀπὸ τοῦ αὐτομάτου γέγονεν, ἀλλὰ μοι δῆλόν ἐστι τοῦτο, ὅτι ἤδη τεθνάναι καὶ ἀπηλλάχθαι πραγμάτων βέλτιον ἦν μοι.

7. Translate into Greek prose:

Francis attempting to become master of the town by diverting the course of the Tesino, which is its defence on one side, a sudden inundation of the river destroyed in one day the labour of many weeks, and swept away all the mounds which his army had raised with infinite toil as well as at great expense.

8. Translate:

ὁ Φαρισαῖος σταθεὶς πρὸς ἑαυτὸν ταῦτα προσηύχετο· ὁ Θεὸς, εὐχαριστῶ σοι, ὅτι οὐκ εἰμι ὥσπερ οἱ λοιποὶ τῶν ἀνθρώπων, ἅρπαγες, ἄδικοι, μοιχοὶ, ἢ καὶ ὡς οὗτος ὁ τελώνης· νηστεύω δὶς τοῦ σαββάτου, ἀποδεκατῶ πάντα ὅσα κτῶμαι.

Who were *οἱ τελῶναι*?

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate:

Il s'étonnaient pourtant que, dans l'extrémité d'un pareil combat. Napoléon *fût* si loin du champ de bataille, à l'abri de cette mort *que* tant de miliers d'hommes affrontaient pour lui. Il s'attendaient à *le* voir déboucher au milieu d'*eux*. Les *blessés* par centaines passaient devant lui. Le choc des bataillons s'entendait *par-dessus* sa tête. Jérôme, son frère, rougissant de sa propre sûreté pendant que tant de vies se donnaient pour *la sienne*, murmurait à demi-voix contre cette immobilité de l'empereur.

(i) Write out (in full) the verb *s'entendait*, and give the principal parts of *rougissant*.

(ii) Parse the words in italics.

2. Give three verbs governing the preposition *à*, three governing *de*, and three governing *pour*. Illustrate each by examples.

3. Translate into French:

I was obliged to obey my general's orders immediately.—There is no greater source of happiness than doing good to others.—His picture is to be seen in the gallery.—Although he wrote he did not receive any answer.—The Revolution in France was nothing but a continual succession of rulers.

4. What are the terminations of the 1st, 2nd, and 3rd persons in the *indicative present* and *subjunctive present* of verbs? Mention any irregularities you know.

5. Translate, *Le Directoire*, p. 27, l. 15, to p. 28, l. 30.

(i) Describe *cette déplorable situation*.

(ii) Give the principal parts of *vécurent, redevinrent, acquérir, reparut, agissait*.

(iii) Explain *de* (biens nationaux), *fût* ébranlé, *introduites*, s'y opposât, Ils se sont *agités*, une chose .... *ce sont*.

(iv) What gender are *existence, sûreté mort, l'été*? Are they according to rule?

6. Correct fully and explain:

(i) Cette fille est tout couverte des jolies fleurs.

(ii) Prête-moi votre plume, pour remplacer ce que j'ai perdu.

(iii) Le roi a voulu pardonné cet homme.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Translate, *Le Directoire*, p. 28, l. 7, "Les deux partes," to p. 29, l. 27, "le bien public."

(i) Enumerate the conjunctions governing the same mood as *sans que.*

(ii) Comment on *n'en faisait, une chose .... ce sont, à la longue.*

(iii) Derive *accolade.*

(iv) *Premier* and *second.* What other forms have these ordinals? When are they respectively used?

2. Explain fully the origin of the negatives in French. Give instances of *ne* used in an affirmative sentence.

3. Translate:

I think we shall have a hard winter.—How many people we have found on whose gratitude we had relied, who not only have not helped us, but who moreover have done us a bad turn.—Tell him I forbid him ever to remember the wrongs done to his family.

Translate:

De quoi s'agit-il?—Trouvez-vous donc à y redire?—Quoiqu'il en soit, je ne vous en veux pas.—Quand on est sage on ne voit rien dans le monde qui ne paraisse de travers, et qui ne déplaise. —Les conversations ne font que m'ennuyer.

4. (i) Name the first five members of the Directoral Republic. Describe the state of France on their accession to power, and the result of their rule.

(ii) What was the policy of England with regard to France at this time?

(iii) Relate briefly the events contained in chap. vii., *Le Directoire.*

5. Translate, *Le Misanthrope*, Act II. Sc. v., "*Celimène.*—Oui, mais il veut avoir trop d'esprit," &c.; "*Alceste.*—Ils frappent tous la mienne," &c.; "*Eliante.*—L'amour," &c.

6. Continue from memory the passage, "Le pauvre esprit de femme," Act II. Sc. v.

7. What persons are supposed to be represented in this scene?

8. Derive and explain *vétille, tutaye, grouille il se barbouille, la fleurette est mignonne.*

9. Give a brief analysis of Act II.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Give a short resumé of the development and growth of the French language up to the 18th century, pointing out the various foreign influences at work, and the striking features in each century.

2. Enumerate the three distinctive signs of words of popular origin. Explain the terms *permutation*, *syncope*, and *transposition* of letters in words. Illustrate each by three examples.

3. (i) Give the history of *es* in *espèce*, and *ès* in *bachelier ès lettres*.

(ii) Explain the origin of *s* as sign of the plural, and of the use of present participles *suivant*, *pendant*, &c., as prepositions.

4. Write out the primitive tenses of *aller* and *être*, and explain their irregularities.

5. Translate:

Napoléon, au contraire, lassé de quinze ans d'action, énervé par une longue prospérité, habitué à *de* faciles obeissances, étonnés des premiers murmures contre son autorité, assouri de gloire, *usé de* forces, vieilli par l'empire, incrédule aux devouements parce qu'il les avait *remplacés* par les cupidités, flatté si longtemps par les succès qu'il ne savait plus que céder aux revers, redoutant d'invoquer la liberté du sein de ce peuple, de peur qu'elle ne lui *apparût* sous les traits de la révolution et de la vengeance cherchant en lui-même sa volonté et n'y trouvant plus que ses irrésolutions, répugnait à toute entreprise et à toute audace.

(i) Give fully the rules applying to the words in italics.

(ii) Derive *volunté*. Of what gender are words ending in *té*, *ence*, *i*, *eur*, *s*, *ion*? Give all exceptions to these rules, and account for them.

6. Enumerate (i) the dramatists, (ii) the philosophers, (iii) orators, (iv) satirists, of the latter half of the 18th century. Give the date of each, and mention their principal works.

7. Write sentences introducing the following: *quelque que*, *sans que*, *feu* (late), *dont*, *pardonner*, *souhaiter*, *s'en aller*, *servir de*.

8. Describe briefly the literature of this period, comparing it with that of the preceding and following centuries.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 45, "*Ernst.*—Ein grosser Sinn," to p. 46, "Gestalten."

Parse *andrer, andre, strengere, gerüttelt, war geritten, schwebend, glänzenden.*

Decline *ein grosser Sinn.* Why is the adjective strong here?

des Reiches Sache fremd. Why is the adjective invariable here?

da kamest du herabgeschifft. Explain this use of the past participle.

2. Name the prepositions that take the dative, and write a short sentence with each.

3. Write out the imperfect, and give the past participle of *vergessen, sitzen, schlagen, treten, ergreifen, vernehmen, begegnen.*

State which of these verbs are conjugated with *haben* and which with *sein.*

4. Give some simple rules for the place of the verb in a German sentence.

5. Translate into English:

"Gieb, Vater, mir heraus mein Erbe!"
So spricht der ungerathne Sohn.
"Ist *dein* nicht Alles, wenn ich sterbe,
Ist alles *Meine dein* nicht schon?
O Sohn! um *dessen Herz* ich werbe!"
Doch *trotz'ger* hebt er an zu drohn:
"Mein Erb; ich hasse diesen Ort!"
Der Vater giebt's, der Sohn *zieht fort.*

Parse the words in italics.

6. Translate into German:

Once upon a time there lived a merchant who was so rich that he could have paved the whole street with silver. But he did not do that, he knew how to make better use of his money. And whenever he spent a shilling he got a pound back for it.

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 27, "Erstaunlich," to "Bildung des Volkes."

Alles was ihm lieb ist, feiert er durch Gedichte oder Lobreden. Account for the order of the words in this sentence, and re-write it, beginning with the subject.

2. What is the force of the prefixes *er* and *be*? Explain by reference to verbs in the above passage.

3. Translate:

Diese zehn Jahre von 1746 bis 1756 sind es, in denen Friedrich als Schriftsteller Selbstgefühl und eine Bedeutung gewann, welche noch heut in Deutschland nicht nach Gebühr gewürdigt wird.

What political event occurred in 1756?

4. How are reflective verbs conjugated in German?

Translate:

(i) They are washing their hands.

(ii) I remember the circumstance.

(iii) They were quarrelling about the books.

(iv) I envy you that beautiful house.

5. Translate: *Ernst, Herzog von Schwaben*, p. 47, "*Werner.*—Von diesem Hass," to "letzten Hauch."

6. Translate into English:

Es gibt Menschen, auf welche eines solche Reihe Ungemach aus heiterm Himmel fällt, dass sie endlich da stehen und das hagelnde Gewitter über sich ergehen lassen: so wie es auch andere gibt, die das Glück mit solchem ausgesuchten Eigensinne heimsucht, dass es scheint, als kehrten sich in einem gegebenen Falle die Naturgesetze um, damit es nur zu ihrem Heile auschlage.

STIFTER.

7. Translate into German:

Johann Ludwig Uhland was born in 1787 at Tübingen, where he studied law, and was appointed professor of German literature in 1829. He was active as a member of the German parliament in 1848, and died in 1862. His first volume of poetry was very successful, and soon passed through several editions.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750-1800.

1. Name the chief lyric poets of the period 1750—1800.

2. Give some account of Bürger and Voss.

3. Translate:

Klar aus Dämmerung stieg am goldenen Himmel der Maitag,
Liebliche Wärm' ausströmend, und leuchtete sanft in die Fenster,
Dass ihr scheibiger Glanz mit wankendem Schatten des Pfirsichs
Glomm an der Wand, und hellte des Alkovs grüne Gardinen,
Wo sich erquickte der Greis nach ämsiger Amtesbesorgung.
VOSS.

4. What sort of poem was *Luise*? Why may it be considered a failure?

Write a short criticism on Goethe's *Hermann und Dorothea*, contrasting it with Voss's poem.

5. Translate:

Aus Absicht und Stoff entsteht die Form, man kann von einer Historie nicht die freie Entfaltung fordern, welche wenigstens die Theorie in einem poetischen Werke sucht, und ich weiss nicht, ob man sie mit Recht in den Werken griechischer und Römischer Meister gefunden zu haben glaubt. Strenge Darstellung der Thatsache, wie bedingt und unschön sie auch sei, ist ohne Zweifel das oberste Gesetz. RANKE.

6. Translate into German:

Indeed, small matter though it seem to be, I hold that every workman should look well to the implements of his calling. There is a proverb that says that "A bad workman complains of his tools." It may be so, but good workmen work better with good tools. To those who work with their hands they are everything; to those who work with their heads they are of more account than may be supposed.

7. Senior Paper, No. 4.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Find the circumference of a wheel which makes 1440 revolutions in a mile.

2. Give all the numbers under 200 which are multiples of 16, also all the measures of 240.

3. What is the smallest sum which could be paid in either guineas or sovereigns, and the least distance which could be expressed in 33 yards or poles?

4. Simplify:

(i) $\frac{2}{1\frac{1}{2}} \times \frac{3}{2\frac{2}{3}} \times \frac{4}{3\frac{3}{4}}$;

(ii) $\frac{2\frac{2}{3} - 1\frac{1}{2}}{2\frac{2}{3} + 1\frac{1}{2}} \div \frac{2\frac{1}{5} \text{ of } 3}{3\frac{3}{8} \text{ of } 2}$;

(iii) $3 - \cfrac{2}{11 - \cfrac{1}{4 + \cfrac{1}{5 \times \frac{2}{3}}}}$.

5. Find the L.C.M. and H.C.F. of $20\frac{3}{7}$, $2\frac{13}{21}$, $2\frac{18}{35}$.

6. Express as decimals of a pound, 14*s.* 3*d.*, 16*s.* 8*d.*, 15*s.* 4*d.*, 11*s.* 1*d.*; as decimals of a shilling, 3*d.*, $6\frac{1}{2}$*d.*, 15*d.*

7. Find the value, correct to six places, of $47{\cdot}165 \times 3{\cdot}4\dot{3}$ and $67{\cdot}025 \div {\cdot}034\dot{7}$.

8. Find the simple interest on £315 4*s.* 9*d.* for 4 years at $4\frac{1}{4}$ per cent., also the compound interest on £99 19*s.* 9*d.* for 2 years at 3 per cent.

9. How many cubic feet of water will a square cistern, of which the side is 1 yard, the depth 2 feet, contain? What will be the weight if a cubic foot of water weigh 1000 ounces?

10. How many feet in 100 must a road $1\frac{1}{2}$ miles long rise if it rises altogether 462 feet?

11. Explain the terms *ratio* and *proportion*. Distinguish between direct and inverse proportion. What conditions are necessary for four numbers to be proportionals? Find the value of x in the following:

(i) $x : 45 :: 17 : 51$; (ii) $5\frac{1}{4} : x :: 3\frac{3}{7} : 4\frac{2}{7}$;

(iii) $\frac{1}{3} : \frac{1}{12} :: x : \frac{1}{28}$; (iv) $17 : 5\frac{3}{8} :: 81 : x$.

12. A tradesman's annual losses during 5 years average $1\frac{1}{4}$ per cent. on the capital with which he began, and at the end of the 5 years his effects are worth £2531 5*s*. What capital did he begin with?

13. The rate of a clock is ·0375 per cent. too fast. How much will the clock gain in a week?

14. When a $3\frac{1}{4}$ per cent. stock is at 93, find what price a $4\frac{1}{2}$ per cent. stock must bear that an investment may be made in it with equal advantage.

15. If £52 7*s*. 6*d*. be due in $4\frac{1}{2}$ months, £80 10*s*. in $3\frac{1}{2}$ months, and £76 2*s*. 6*d*. in 5 months, when should the whole be paid at once?

16. If a man row 10 miles in $2\frac{1}{2}$ hours against a stream whose rate is 3 miles an hour, how long would be be in rowing 5 miles with the stream?

ANSWERS TO *APRIL* PAPER.

1. £1157 12*s*. $5\frac{3}{4}$*d*.; 5 mi. 0 fur. $106\frac{3}{25}$ yds. 2. $3\frac{3}{4}$ miles.
3. $13\frac{1}{2}$ years. 4. $\frac{17}{30}$, $\frac{5}{6}$, $\frac{13}{30}$, $\frac{133}{140}$, $\frac{1}{140}$, $\frac{19}{30}$. 5. $\frac{17}{42}$, $\frac{1}{187}$.
6. ·571428; 3·3; 2·45; ·75; 2·28. 7. 5·17336875; 517·336875.
8. ·47030625; 1·0749857142. 9. 126·375; 8. 10. £951 0*s*. $7\frac{1}{2}$*d*.
11. £5000. 12. 100 cubic feet. 13. 250 yards.
14. $1257\frac{1}{7}$ feet, $707\frac{1}{7}$ feet, 550 feet. 15. £5 loss. 16. £1 1*s*. $1\frac{1}{3}$*d*.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. If a straight line falling upon two other straight lines make the exterior angle equal to the interior and opposite angle upon the same side of the line, or make the interior angles upon the same side together equal to two right angles, the two straight lines shall be parallel to one another.

2. The opposite sides and angles of a parallelogram are equal to one another, and the diameter bisects it, that is, divides it into two equal parts.

3. Parallelograms upon the same base or upon equal bases and between the same parallels are equal to one another.

4. Bisect a triangle by a line drawn from a given point in one of the sides.

5. From the extremities of the base of an isosceles triangle straight lines are drawn perpendicular to the sides; the angles made by them are each equal to half the vertical angle.

6. The straight line EDF, drawn at right angles to BC the base of an isosceles triangle ABC, cuts the side AB in D, and CA produced in E; shew that AED is an isosceles triangle.

7. Explain the terms *rectangle, gnomon, complements of a parallelogram.*

8. If there be two straight lines, one of which is divided into any number of parts, the rectangle contained by the two straight lines is equal to the rectangles contained by the undivided line and the several parts of the divided line.

9. From a given circle cut off a segment which shall contain an angle equal to a given rectilineal angle.

10. Define the terms *radius, arc, circumference, chord, secant, tangent.*

11. Given, base, vertical angle, and perpendicular in a plane triangle, construct the triangle.

12. Inscribe a circle in a given equilateral and equiangular pentagon.

13. Divide a given straight line similarly to a given divided straight line, that is, into parts that shall have the same ratios to one another which the parts of the divided given straight line have.

14. Every solid angle is contained by plane angles which are together less than four right angles.

15. Draw a straight line which shall touch two given circles.

16. Draw a line from one of the angles at the base of a triangle so that the part of it cut off by a line drawn from the vertex parallel to the base may have a given ratio to the part cut off by the opposite side.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 6—12 inclusive.
Higher Local work Nos. 8—16 inclusive.

1. Find the value of

(i) $\frac{x-a}{b}-\frac{x-b}{a}$ where $x=\frac{a+b}{a-b}$;

(ii) $\frac{4}{(a-b)(b-c)}+\frac{5}{(a-c)(b-a)}+\frac{3}{(c-a)(c-b)}+\frac{2}{(a-b)(b-c)}$.

2. Find the cube of $a+b+c$, and thence, without further working, find the cube of $a-b+c$ and of $a+b-c$.

3. If $a=\frac{2}{4-b}$, $b=\frac{3c}{4-c}$, $c=\frac{4}{4-d}$, $d=\frac{5}{4-x}$, find the relation between a and x.

4. Find two numbers whose difference multiplied by their sum is equal to 52, and the sum of whose squares is equal to 34.

5. Solve the equations:

(i) $3x^2+15x-2\sqrt{x^2+5x+1}=2$;

(ii) $\frac{x+3}{4}-\frac{x+5}{7}+\frac{4x-2}{9}=5$;

(iii) $(x-a)(x+b)+(x+a)^2+(x+b)^2=2ab$.

6. If $A \propto B$ when C is invariable, and $A \propto C$ when B is invariable, then will $A \propto BC$ when both B and C are variable.

If the wages of 7 men for 8 weeks be £58 16*s.*, what will be the wages of 5 men for 13 weeks?

7. If the roots of $x^2-3a+13=0$ be α and β, form the equation whose roots are $\frac{\alpha^2}{\beta}$ and $\frac{\beta^2}{\alpha}$.

8. Find the sum of the products of the first n natural numbers taken two and two together.

9. Determine how many terms of $1+5+9+\ldots$ amount to 1249.

10. Find the binomial expansion of which four consecutive terms are 100000, 150000, 90000, and 27000.

11. A number is represented in the denary scale by 12615 and in another scale by 30507. Find the radix of the latter scale. Express $\frac{14}{15}\frac{7}{9}$ in scale of nine.

12. If the interest on £P for a year is equal to the discount on £Q for the same time, find the rate of interest.

13. Solve the equations:

(i) $\sqrt{a+x}+\sqrt{b+x}=2\sqrt{abx}$;

(ii) $x^2-7x+\sqrt{x^2-7x+18}=24$.

14. Determine the number of terms in the expansion of $(x+y+z)^9$.

15. Find the seventh convergent to each root of

$$x^2-13x+4=0.$$

16. From 560 gallons of wine a certain number of gallons are drawn and replaced with water. This is done a second, a third, and a fourth time, and 182 gallons are then left. How much was drawn out each time?

ANSWERS TO *APRIL* PAPER.

1. (i) $(a^3-b^3)^3$; (ii) $\frac{1}{(a-b)^2}$. 2. $\frac{1}{\sqrt{161}}$.

3. (i) $x=\frac{1}{\sqrt{8}}$ or $\sqrt{8}$; (ii) $x=\frac{19+\sqrt{641}}{2}$; (iii) $x=2$, $y=3$, $z=4$.

4. 8. 5. (i) $3x^2-19x+30=0$; (ii) $x=\frac{4a}{1-b^2}$ or $x=0$.

6. £800; £200. 7. (i) 270; (ii) $\frac{x^{13}-4^{13}}{4^{10}(x-4)}$.

8. $A=\frac{2a^2}{a^2-b^2}$, $G=\frac{2a}{\sqrt{a^2-b^2}}$, $H=2$. 11. 1e4e07.

12. $(a+b+c)(a+b-c)(a+c-b)(b+c-a)$.

13. Fifth and sixth terms. 15. $\frac{1}{1}+\frac{1}{1}+\frac{1}{2}+\frac{1}{1}+\frac{1}{2}+\frac{1}{15}+\frac{1}{1}+\frac{1}{1}+\frac{1}{1}$.

16. $\frac{24.23.22.21}{\underline{|4}}\times\frac{17.16.15}{\underline{|3}}$.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Express in each system of angular measurement the angle described by the minute hand of a watch in 47 minutes.

2. Prove that
$$\frac{\tan A + \tan B + \tan C}{(\sin A + \sin B + \sin C)^2} = \frac{\tan A \,.\, \tan B \,.\, \tan C}{2\,(1+\cos A)\,(1+\cos B)\,(1+\cos C)}.$$

3. Shew how to solve a triangle having given two sides and the angle opposite to one of them. Illustrate the ambiguous case by figures.

4. The side AB of the triangle ABC is bisected at D, and CD is joined; find the tangent of the angle CDB.

5. Deduce the formula for $\sin A$ in terms of $\sin 2A$ from the equation $\cos A = \pm \frac{\sqrt{1+\cos 2A}}{2}$. How may the proper signs for the radicals be determined?

6. Two circles, whose radii are 4 and 6 respectively, cut one another at an angle of 60°; find the length of the common chord.

7. Find the conditions of equilibrium in a system of pulleys in which the string which passes round any pulley is attached at one end of it to the weight, and at the other end to the next pulley, the strings being all parallel.

8. A ladder, whose mass is 200 lb., is carried by two men; find the pressure sustained by each man if the one be 10 feet and the other 15 feet from the centre of gravity of the ladder.

9. If three forces be in equilibrium, prove that they either all meet in a point or are parallel to each other.

10. A ball fired from a gun at an elevation of 30° strikes the ground at a distance of 5 miles; find the velocity of the ball on leaving the gun.

11. A body is let fall from a height of 200 feet, and at the same moment a body is projected vertically upwards from the ground. They meet 150 feet from the ground. What was the velocity of projection of the second body?

12. Shew how to determine the value of the accelerating force of gravity from observations of the pendulum.

Higher Mathematics.

Women.

Statics, Dynamics, Astronomy.

1. Prove that when there is equilibrium on an inclined plane (the power acting horizontally) the power is to the weight as the height of the plane is to the base.

2. The distances of the points of application of any number of parallel forces from a straight line being given, determine the distance of the centre of the parallel forces from that straight line, the straight line and the points being all in one plane.

3. Two men of the same height bear a weight hung on a pole which rests on their shoulders. Where must the weight be placed in order that one man may support two-thirds of the weight?

4. Forces proportional to 1, $\frac{1}{\sqrt{3}}$, and $\frac{1}{\sqrt{2}}$ act at a point and are in equilibrium. Find the angle between their lines of action.

5. A ball of perfect elasticity impinges upon a ball (also elastic) of equal mass at rest. The angle between the former and latter direction of motion of the first ball after impact is 45°. Find the velocity after impact.

6. From a given point find the plane of quickest descent to a vertical plane at a given distance from the point.

7. A projectile is moving at an angle of 45° to the horizon after 4 seconds, and is moving horizontally after 6 seconds, the time in each case being measured from the moment of projection. Find the velocity and the angle of projection.

8. Two weights of masses m and m' connected by a vertical string are allowed to fall. Find the tension of the string.

9. In what way does the aberration of light affect the apparent position of a star? Draw a diagram shewing the aberration ellipse.

10. Describe and account for the phases presented by Mercury and Venus.

11. Describe accurately the causes which produce the succession of the seasons. Describe the changes which take place in the course of a year in the South Temperate Zone.

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. One angle of a quadrilateral is 45°, another contains 60 grades, and the circular measure of another is $2\frac{\pi}{3}$; express all the four angles in degrees, in grades, and in circular measure.

2. Trace the changes in sign and magnitude of sine $\theta - \sec\theta$ as θ varies from 180° to 360°.

3. Find an expression for all the angles which have a given cosine. Find the general value of the angle whose sine is to its tangent as 1 is to 2.

4. Shew that with usual notation $r_1 + r_2 + r_3 = r + 4R$.

Find the area of a quadrilateral which can be inscribed in a circle.

5. Find the value of $\tan(\tan^{-1}x + \cot^{-1}x)$.

6. Solve the triangle ABC, having given that the base is 7 ft., the height 5 ft., and the difference between B and C, the angles at the base, is 15°.

7. The area of any parallelogram formed by drawing tangents to an ellipse at the extremities of a pair of conjugate diameters is equal to the rectangle contained by the axes of the ellipse.

8. Draw a pair of tangents to an hyperbola from an external point O. What are the conditions that the points of contact P and P' may be (i) upon the same branch, (ii) on opposite branches of the hyperbola?

9. Two tangents to the parabola $y^2 = 4ax$ are $y = x\tan\alpha_1 + c\cot\alpha_1$, $y = x\tan\alpha_2 + c\cot\alpha_2$; find the locus of their intersection if $\sin\alpha_1 \sin\alpha_2 = k$.

10. Find the distance between the lines $\frac{x}{a} + \frac{y}{b} = 4, \frac{x}{a} + \frac{y}{b} = 5$.

11. Find the condition that three straight lines pass through the same point.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. Find the percentage composition of common salt.

2. Name the metals of the alkalies, and give their general properties. In what respects does ammonium resemble them?

3. How is iron obtained? What are the differences between cast iron, wrought iron, and steel?

(*b*)

4. What occurs when a mixture of powdered sugar and potassic chlorate is touched with a glass rod moistened with sulphuric acid? What effect has sulphuric acid when heated upon copper, sodium chloride, and manganic oxide?

5. Describe the process of making soap. What substances enter into its composition?

(*c*)

6. Find a point within an equilateral triangle at which, if a particle be placed, it will be kept in equilibrium by three forces represented by the straight lines joining the point with the angular points of the triangle.

7. A weight of 56 lb. rests on a rough plane inclined at an angle of 45° to the horizon; find the normal pressure on the plane.

8. Explain the principles involved in artesian wells, also in swimming. Account for drowning.

(*d*)

9. Distinguish between a *gas* and a *vapour*.

10. Explain the terms *conduction* and *convection of heat*. Describe experiments proving each. Why will neither of these processes account for heat reaching us from the sun?

11. Define *specific heat, the boiling point, the dew point, the efficiency of an engine,* and *the availability of any source of energy*.

(*e*)

12. Mention any causes which will prevent a magnetic needle pointing due north and south. How is the magnetic needle obtained?

13. State how you could ascertain the direction of a current of electricity in a wire of which the ends are concealed.

14. On what does the time of vibration of a compass needle depend?

Describe some method of comparing the relative strengths of the earth's magnetic field in different localities.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Explain, with reference to examples, the expression of phyllotaxy by the terms $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{5}$, $\frac{3}{8}$.

2. Classify the inflorescences of wallflower, dandelion, cowslip, daisy, forget-me-not, dead-nettle, currant, lilac.

3. What facts support the theory that all the members of a flower are modified leaves?

4. Examine the following plants: hyacinth, strawberry, broom, may, narcissus, and pansy. Point out to what order they belong by giving what is characteristic of the order, and describe fully the two last.

(*b*)

1. Give a short classification of the sub-kingdom mollusca, with definitions, and state what animals of commercial value it contains.

2. Describe the mantle of a mollusc, and its uses. Illustrate your answer by reference to a snail and a fresh-water mussel.

3. What is an *octontophore*? Describe it minutely.

4. Describe the nervous system as it exists in any one member of the mollusca.

(*c*)

1. How are landslips caused? Account for the formation of the under-cliff in the Isle of Wight.

2. Explain why water sinks into the ground in some places and flows out in the form of springs in others. What is the origin of hot springs? Describe the Geysers.

3. In what beds does coal occur? How do you suppose it to have been formed? What useful substances are obtained from the new red sandstone and the oolites?

4. By what characters should you endeavour to discover the geological age of any bed? In what part of Great Britain are the oldest rocks, and where are the most recent?

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (*a*) *and in one at least of the subjects* (*b*) *to* (*g*). *No Student will be examined in more than three of the subjects* (*b*) *to* (*g*) *in one year.*

(*a*)

1. State the law of Avogadro. What are the grounds on which it is accepted, and what phenomena does it explain?

2. Define the following terms: deliquescence, efflorescence, atomic weight, fractional distillation, molecules, saturation, water of crystallisation.

3. Prove that the centre of gravity of a triangle coincides with the centre of gravity of three equal heavy particles placed at the angular points of the triangle.

How may the centre of gravity of any plane rectilineal figure be ascertained?

4. Find the force toward the centre required to make a body move uniformly in a circle whose radius is 5 feet, with such a velocity as to complete a revolution in 5 seconds.

5. Sketch the arrangement of the nervous system in a vertebrate body.

6. Describe fully the structure of the heart and the head of the frog.

(*b*)

1. Give examples of monad, dyad, and triad compound radicals. What is meant by rational and empirical formulæ?

2. What metals are precipitated as sulphides when their acid solutions are first supersaturated with ammonia and then treated with excess of ammonic sulphide?

3. What are the compounds of manganese with oxygen? How are potassium manganate and permanganate formed? Give equations. Upon what does the value of these compounds depend?

4. What is the chemical formula of a body having the following percentage composition?

$S =$	32·65
$O =$	65·31
$H =$	2.04
	100·00

(*c*)

1. Explain the formation of Newton's rings. Describe a method of measuring the wave-length of any kind of light by means of a biprism or grating.

2. On what does the time of vibration of a compass-needle depend?

Describe some method of comparing the relative strength of the earth's magnetic field in different localities.

3. Describe a good form of reflecting galvanometer. What is the use of a shunt, and how does the current divide itself between the galvanometer and the shunt?

4. Describe fully Edison's transmitter. Why is it possible for the sound heard in this instrument to be louder than that originally produced?

(*d*)

1. What evidence is there in the development of phanerogams of affinity with that of selaginella?

2. Explain the nature of the fruits of the apple, fig, gooseberry, cherry, orange, buttercup.

3. Subdivide the compositæ and rosaceæ, and distinguish between the scrophulariaceæ and labiatæ. Give examples of each.

4. Classify the following plants: monkshood, purple orchis, borage, hyacinth, wood-sorrel, horse-chestnut. Describe fully hyacinth and borage.

(*e*)

1. Enumerate the principal characters by which the groups Monstremata and Marsupialia are distinguished, and state the geographical distribution and general features of their members.

2. Give a classification, with definitions, of the class Ungulata and its sub-groups. Describe the structure of the stomach in Ruminants.

3. Draw diagrams illlustrating the circulation in Mammalia, and its development.

4. What are the general characteristics of a mammalian vertebra?

What modifications from the ordinary type of skeleton are seen in Cetacea? Describe in detail the skull of a dog.

(*f*)

1. Shew by diagrams the principal parts of a human brain. State the point of origin and functions of the first, second, fifth, seventh, eighth, and tenth cranial nerves respectively.

2. Trace the relations between the brain and spinal cord, shewing the structural features that are common to both, and the alterations they have undergone in the brain.

3. Explain the phenomena exhibited by an animal deprived of its cerebral hemispheres. What is known of the functions of the cerebral convolutions? What do you understand by *co-ordination*?

4. Explain the structure of the human larynx, and the mechanism by which the voice is produced and modified.

(*g*)

1. Give the history of a glacier. In what way does it act as an agent of denudation? How can the beds of ancient glaciers which have disappeared, and their direction, be recognised?

2. At what places in Britain do Miocene rocks appear? Give a short description of the characters of these rocks in the principal localities.

3. What deposits are classed as Pleistocene? Give the relative position, in geological time, of the glacial period in England, and the first traces yet known of man's appearance on earth.

4. Of what formations are the following fossils characteristic? voluta Lamberti, nipadites ellipticus, globigerina bulloides, lingulella Davisii, phacops caudatus, gryphæa incurva, and cideris florigemma.

Logic.

Higher Local.

1. What is the object and what are the requisites of scientific classification? Explain and criticise Dr. Whewell's theory that natural groups are given by type, not by definition.

2. It has been said that the definition of a fallacy varies with the definition of logic. Shew how this is true, and give your own definition of a fallacy.

3. Name the five classes into which Mill divides fallacies, and give original examples of fallacies (i) of non-observation, (ii) of generalisation, and (iii) of confusion.

4. Point out the fallacies involved in the following arguments, and shew to what classes they belong:

(i) His strength of character might have been known by the influence he exerted over his schoolfellows, for all strong-minded persons possess influence over others.

(ii) Those who hold that corporal punishment should be abolished in schools must also allow that children should not be threatened with such punishment, for it is unjust to punish anyone without having formerly threatened him with punishment.

(iii) One of the duties of a government is to maintain order by punishing wrong-doers. Mrs. A is doing wrong in neglecting her domestic duties, therefore Mrs. A ought to be punished by the government.

(iv) It is unnatural for women to speak in public, because it is contrary to all one's ideas of the sphere for which nature has fitted them.

5. Explain how it is that the deductive, and not the inductive, method is used in ascertaining the truths of moral philosophy.

6. Explain the terms: formal law of thought, formal truth, anticipation, and criterion.

7. Point out the main differences between the logical systems of Mill and Thomson.

8. Write an essay upon the possibility of a science of moral philosophy, answering successively the objections made to such a science.

Constitutional History.

SPECIAL PERIOD, 1199—1307; GENERAL.

Higher Local.

1. Group A, Paper 2.

2. Compare the Parliament of Edward I. with the Anglo-Saxon Witan, with reference (i) to its constitution, (ii) to its functions.

3. "Every department of administration felt his guiding and defining hand." Illustrate this statement with reference to Edward I.

4. Group A, 1.

5. Examine the statement that the English kingship is elective.

6. Enumerate the five essential checks which Hallam mentions as existing at the accession of Henry VII. Mention the main steps both before and after that date by which these five checks were established and strengthened.

7. Group A, 4.

8. What are the constitutional questions usually connected with the name of John Wilkes?

9. Trace the various efforts to obtain parliamentary reform. Give the main provisions of the Reform Bill of 1832. Estimate its constitutional importance.

Political Economy.

Higher Local.

1. State the probable results of a present increase in England in the supply of (i) capital, (ii) money, (iii) skilled labour.

2. How are international values determined?

3. What advantages are likely to result from the fact that a country possesses a good banking system? What would you consider were the essentials of a good banking system?

4. Write an essay on one of the following subjects:

(i) "The indefinitely progressive nature of economic investigation."

(ii) "The place of statistics in economic reasoning."

(iii) "The Currency Act of 1844."

(iv) "The principles which should govern all interference by government."

(v) "The contributions made to Political Economy (*a*) by Adam Smith and (*b*) Ricardo.

5. Senior Paper, No. 3.

6. Senior Paper, No. 5.

Political Economy.

Senior.

1. What do you consider would be the effect on the purchasing power of money in England if (i) we exported half our currency; if (ii) the currency were doubled within a very short time?

2. Analyse cost of production. How far would cost of production determine the prices of one of the following articles? one of Turner's pictures, a truck of coal, a new novel, a steam engine.

3. Define: degradation of labour, net advantages of a trade, margin of cultivation, net income of a country, nominal wages, remuneratory capital.

4. What do you mean by credit? "The credit of England is better than that of Egypt." What do we mean by this statement? Explain why England's credit is good.

5. What is meant by (i) discounting a bill and (ii) endorsing a bill?

In what way are bills of exchange a convenient form of credit?

6. Write an essay on one of the following subjects:

(i) "The advantages of co-operation."

(ii) "Is it desirable that government should interfere with emigration? If so, on what principles should that interference be conducted?"

Music.

Junior and Senior.

1. Pick out as many different time signatures as you can from the sonatas of Mozart or Beethoven (Beethoven if possible). Classify them under the heads of simple and compound duple, triple, and quadruple time, and copy a specimen bar of each, marking thus ∧ the commencement of each beat.

2. Write the signatures of all the major scales in their proper order. Besides the name of the major scale give also in each case that of the minor scale which has the same signature.

3. Explain the names given to the degrees of the scale, and say for what reason they were given.

4. Distinguish between the tonic minor and relative minor of a major scale, and say which sounds of the major scale are altered in each.

5. Write the two commonly used forms of the following minor scales, and name their relative majors: F sharp, D sharp, B flat, C.

6. What is an *interval* in music? How are intervals named and reckoned? Give examples of your answer.

7. What intervals are contained within an octave, and what are intervals said to be when they exceed that limit?

8. What is the connexion between major intervals and major scales?

For Senior Candidates only.

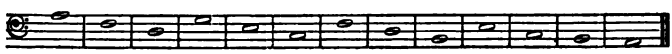
9. Give the sign for a *shake*, and shew by an example how it is executed.

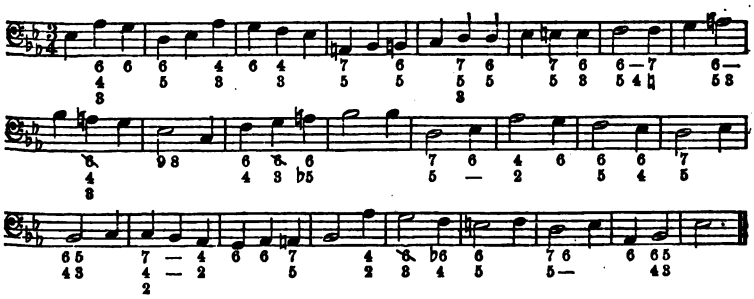
10. Give the names and dates of the four composers you consider greatest who were born in the eighteenth century, and four who were born in the nineteenth.

Music.

Higher Local.

1. Add original alto, tenor, and bass parts to the hymn tune "Rockingham."

2. Write exercises in three- and four-part counterpoint of the 1st species to the following *canto fermo*, placing it alternately in all the parts:

3. Sketch a plan or framework of a 1st movement of a sonata, with the first subject in A major, shewing the order of subjects, etc., and the succession of keys.

4. Harmonise the following figured bass, and write the ground-notes on a separate stave below the bass:

For Candidates for Classes I. and II. only.

5. (i) Explain the laws of *resonance*, and the use of the resonator.

(ii) Explain the fact that the sound produced in a closed pipe is an octave lower than one produced in an open pipe of the same length.

(iii) On what does the *quality* of musical sounds depend? Give reasons for your answer.

(iv) Between which sounds of the natural harmonic series do the following intervals occur, and what are their ratios of vibration? major 3rd, major 6th, minor 3rd, perfect 4th.

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Work of Pestalozzi.*

1. How do you define and distinguish between the terms *empirical* and *scientific* knowledge?

2. Who was Jacotot? What was his favourite axiom? Explain briefly what he most insisted on in his scheme of education, and shew how he carried out his principles in the teaching of French.

3. What was Ascham's method of teaching a language as given in *The Scholemaster*?

4. "A good educational method favours self-teaching." Illustrate this statement by reference to the methods of Ascham and Jacotot.

5. What do you consider to be the chief evils which arise from having too wide and varied a curriculum?

6. Are the observing or the reflective faculties first developed in children? Mention some studies which tend specially to develope the reflective faculties?

7. What differences are involved in the relation of a teacher to a class of children as compared with the relation of a professor to his class of young men or women? In which case is special training for the work of teaching of the greater importance?

8. Give some account of the *Philanthropinum* of Basedow. Whose ideas were to a great extent embodied in it? What great German philosopher gave the system his support? What grave defects of character curtailed Basedow's influence as a teacher?

9. What inducements or expedients would a wise teacher make use of in training children to the habit of attention? Comment on the following statement: "Instead of increasing excitements to produce attention we may vary them, which will have just the same effect."

10. What does Locke mean by the phrase, "breaking the mind"? and what are his remarks on this subject?

11. If you have had any experience in the drawing up of time tables for a high school, state what are the chief difficulties generally met with, and how you would propose to overcome them.

Editorial.

Higher Local Students are particularly requested to send in their May papers on the 25th of the month instead of the 31st, that it may be possible for the Examiners to return them before the examination begins in June.

It is also requested that Students of the Correspondence Class who are candidates for any of the prizes we have offered, of which the list was published in September, 1881, will acquaint the Editor with their examination number so soon as the examination shall be concluded.

Junior and Senior Students, who have announced their intention of joining the Correspondence Class for the last half of the ten months' course, are reminded that they should send in their first papers next month.

We were pleased to see that several April papers were worked as unprepared examinations, and that some of them were "highly satisfactory." We would suggest, however, that it is not necessary nor generally desirable to answer the questions in their order; it is better, having read the paper through, to answer first all those questions with the reply to which you are most ready, and which can be given shortly, then to take questions with the replies to which you are equally ready but which must of necessity be long, and after that attempt those which are more difficult.

In the Arithmetic paper (p. 170, No. 16) some Students failed to be quite correct in their answering because they reduced a fraction of a 1*d.* to farthings, and finding they had half a farthing, left it to read as a halfpenny. We have before protested against the habit of expressing sums in fractions of anything less than a penny. Decimals to the seventh place will always be accepted, but not such an answer as £4 17*s.* $6\frac{1}{4}d.$ + one-ninth.

Our June number will as usual contain extra general Examination Papers for children between the ages of 10 and 16 in English History, Grammar, Geography, Arithmetic, Algebra, Geometry, French, and German.

Principals of Schools who wish to have copies of any of the papers, or special papers for the Summer Examinations in their Schools, will greatly oblige by stating early in June the subjects and number of sets of 20 copies each they will require.

We beg to call the attention of our subscribers to an advertisement which has appeared in our columns for the last few months, asking for a few copies of the first and second numbers of *The Cambridge Examiner*. Any who will part with the January and February numbers, 1881, or having had the year's numbers bound with the volume, will oblige by writing to the Office and stating the price of the same.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. Describe the visit of Joash to Elisha before the death of the prophet.

2. Fill in from the Second Book of Chronicles what happened between the events spoken of in the seventeenth and eighteenth verses of 1 Kings xii.

3. What was the plan of Jehoash for collecting the money required for repairing the house of the Lord? How was it afterwards modified?

4. Explain the following passages:

(i) "They went out from under the hand of the Syrians."

(ii) "The coming in of the year."

(iii) "The money that every man is set at."

(*b*)

5. Give some account of the situation and history of the town of Cæsarea Philippi.

6. Give the probable reason for the significant omission in the account given by St. Mark of Christ's conversation with His disciples at Cæsarea Philippi.

7. On what occasions in the lifetime of the disciples might the kingdom of God be said to have "come with power"? See chap. ix. 1.

(*c*)

8. Comment on the following passages:

(i) "The churches of Macedonia."

(ii) "We do you to wit."

(iii) "The brother whose praise is in the Gospel."

9. Quote some passages from chap. viii. shewing that St. Paul acted with wisdom and prudence in respect of the collection from the church at Corinth.

10. "I robbed other churches," &c. Explain and illustrate this passage, shewing which church is specially alluded to. What was St. Paul's reason for taking this course?

(*d*)

11. Who are included in "the Communion of Saints"? What passages of Scripture support the view that departed saints may be included in this fellowship?

12. What are the great privileges of the Christian Church?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (a), (b), (c), (d), (e).

(*a*)

1. What was meant by the message of Amaziah, "Come let us look one another in the face"? What was the reply sent by the king of Israel?

2. What is the inference to be drawn from chap. xiv. 6, as to the prevailing custom?

3. What acts of sacrilege are recorded against king Ahaz? What heathen superstition did he adopt?

4. Junior Paper, Nos. 3 and 4.

(*b*)

5. Comment on the statement, "The Transfiguration was the summit level of the Incarnation." What change may be noticed after this event as regards the acts and words of Christ?

6. Quote the intimations which had been previously given in vague terms regarding Christ's death.

7. Explain the words *savourest, wist, tabernacle.* On what other occasion had the rebuke in chap. viii. 33 been spoken?

8. Junior Paper, No. 7.

(*c*)

9. What indirect evidence do we find in chap. viii. of a previous visit of Titus to Corinth? How do you explain verse 17?

10. Give the substance of the first six verses of chap. ix. in your own words.

(*d*)

11. What three forms of absolution has the Church of England? What is presupposed on the part of the recipient?

(*e*)

12. Quote a passage from the Book of Acts, illustrating Phil. i. 30.

13. Shew how it may fairly be inferred that Onesimus was a Colossian. Shew how the two Epistles to the Thessalonians supplement each other.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH. II. NEW TESTAMENT: THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.)

I.

1. Give a detailed account of the first capture of Jerusalem, and describe the condition of the kingdom of Judah between the year 584 B.C. and the Edict of Cyrus.

2. Describe carefully the reforms undertaken by Josiah, and shew what part the prophet Jeremiah took in them.

3. Give the context and carefully explain the following passages:

(i) "I will make this house like Shiloh, and this city a curse to all the nations of the earth."

(ii) "Jonadab, the son of Rechab, shall not want a man to stand before me for ever."

(iii) "I proclaim a liberty for you, to the sword, the pestilence and the famine."

II.

4. What charges were brought against St. Paul by the Judaising party in the Galatian Church? Justify your statements by quotations.

5. At what date was the Epistle to the Galatians probably written? Point out and account for the resemblances between it and the Epistle to the Romans.

6. Which Epistles were apparently written during St. Paul's first imprisonment in Rome? From what internal evidence may their date be inferred?

7. Group in order the references to the Old Testament found in the Epistle to the Galatians.

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Enumerate the wives of Henry VIII. By which of them had he descendants? How did he provide for them in his will?

2. Shew in what important respects the foreign policy of Somerset differed from that of Henry VIII.

3. What circumstances led to the battle of Pinkie? Give its date and results.

4. What were the chief causes of the distress among the working classes during the reign of Edward VI.?

5. Senior Paper, No. 5.

6. Trace as fully as possible the progress of the Reformation in England during the reign of Edward VI.

(*b*)

7. What circumstances led Henry IV. to quarrel with the Percies? Discuss the policy of his so doing, and trace its results.

8. Give a brief sketch of the French wars of Henry V.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Name the British possessions in Europe and Africa.

2. Give the boundaries, capes, rivers, lakes, and mountains of Italy. Name and give the position of ten cities in Italy celebrated for their antiquities or works of art. What is the government of Italy?

3. Page 280, No. 7.

English History.

Senior.

(*a*) From Accession of Henry VII. to the death of Elizabeth; (*b*) General Questions.

(*a*)

1. How did Henry VIII.'s policy of centralisation make the position of his successor peculiarly difficult?

2. Sketch the character of the Duke of Somerset, and shew the effect of his foreign and domestic policy on the progress of the kingdom.

3. It has been said that the change from the Protectorate of Somerset to that of Warwick was one in name only. Discuss the truth of this remark.

4. What causes brought about rebellions both in the east and west during the administration of Somerset?

5. Account for an attempt to place Lady Jane Grey upon the throne on the death of Edward VI. Give the particulars of Wyatt's rebellion, and its result.

6. Junior Paper, No. 6.

(*b*)

7. Describe as fully as possible the progress of the Lollard movement previous to 1401. What was the statute *De Hœretico comburendo*?

8. Account for Henry V. being engaged in war with France.

English History.

Higher Local. Group A.

(*a*) GENERAL; (*b*) SPECIAL, 1509—1625.

(*a*)

1. Give an outline of the military history of the Norman Conquest. That conquest has been described as a social rather than a political revolution. Illustrate this statement.

2. Trace the attempts of Edward I. to bring this whole island under one king.

3. What were the results of Scotch interference in English affairs 1639—49?

4. Write an account of the Gordon Riots.

(*b*)

5. Write a brief history of Scotland during this period.

6. What causes were alleged to justify the dissolution of the monasteries? Estimate the effect of this event on the history of the Reformation in England.

7. Give some account of the Acts of Supremacy and Uniformity.

8. Compare the conduct of Elizabeth with that of James I. in reference to the question of Monopolies.

9. Shew the importance of the influence of foreign affairs on English History, 1618—29.

10. Write a brief life of (i) Thomas Cromwell, (ii) Sir Thomas More, (iii) Cranmer, and (iv) Buckingham.

English Literature.

Junior.

KING RICHARD II.

1. Give some instances of words that are understood but not expressed in passages from Act IV.

2. Who bore witness against Aumerle, and how did he meet the charges?

3. What argument does the Bishop of Carlisle mainly rest upon in speaking on Richard's behalf?

4. Comment on any peculiarities in the following passages:

(i) "Learn him forbearance."

(ii) "Rest under gage."

(iii) "From sun to sun."

(iv) "I will be his conduct."

(v) "You were in presence then."

(vi) "Streaming the ensign of the Christian Cross."

(vii) "Little are we beholding to your love."

(viii) "The favours of these men."

5. Senior Paper, No. 2.

English Grammar.

1. What word always follows the comparative form of an adjective? What part of speech is it?

2. What are the three concords in syntax? What is a finite verb?

3. What verbs take two accusatives after them?

4. Analyse and parse the words in italics:

"I live *with* bread *like you, feel* want, taste *grief,*
Need friends:—*subjected thus,*
How *can* you say *to* me I *am* a *king*?"

English Literature.

Senior.

KING RICHARD II.

1. Quote what you consider to be the best passages from Richard's speeches in Act IV., and point out what you consider to be weak and defective in other portions of his speeches.

2. Write a short essay on the character of Richard as unfolded in this play.

3. "I have a king here to my flatterer." Quote a similar form of expression from the Gospel of St. Matthew.

4. What was the last favour Richard asked of Bolingbroke? How was the request answered?

5. By what action does Richard illustrate his words, "A brittle glory shineth in this face"? Criticise this action.

6. How does Richard speak of Northumberland in the fifth Act? What is your opinion as to the truth of this allegation?

7. Junior Paper, No. 4.

English Grammar.

1. Make up some sentences in which *but* shall be used as a relative, a preposition, a conjunction, and an adverb.

2. "When conjunctions seem to connect verbs it is because of some ellipsis." Illustrate this statement by examples.

3. Analyse and parse the words in italics:

"*Superfluous* branches
We *lop away that bearing* boughs *may live*,
Had he done so, *himself* had *borne* the crown
Which waste and idle hours *hath quite* thrown down."

English Language and Literature.

Higher Local.

(*a*) SPENSER'S FAERY QUEENE; (*b*) SHAKESPEARE'S JULIUS CÆSAR; (*c*) BACON'S ADVANCEMENT OF LEARNING.

(*a*)

1. Give an account of Una's adventures from the time when Hypocrisie separates her from the Red Cross Knight, until she meets with Satyrane.

2. Who were Fradubio, Sansloy, Fidessa, Orgoglio, Trevisan, Caelia?

3. Explain and derive: yplast, yod, wonne, welkin, warrayd, trenchand, treen, tire, thewes, snaggy, scryne, ruffin, poyse, priefe, middest.

(*b*)

4. Describe the metre used by Shakespeare. Give examples of irregular lines. What were the first works in which English blank verse was used?

5. Give an account of the character and actions of Cicero, Casca, Antony, Portia.

6. Paraphrase, Act IV. Sc. iii. l. 19—27 (speech by Brutus).

7. Give context, and where necessary comment upon:

(i) "A curse shall light upon the loins of men."

(ii) "Know, Cæsar doth not wrong without just cause."

(iii) "Our arms in strength of welcome and our hearts."

(iv) "That day he overcame the Nervii."

(v) "These are no tricks in plain and simple faith."

(*c*)

8. Compare and contrast Bacon's character as it appears from the ideas expressed in the *Advancement of Learning*, with his real character as shewn in his life.

9. Describe the circumstances which have left a stain on Bacon's character.

10. In what does the divine testimony to the dignity of learning consist?

11. What were the errors of Clement VII., Cicero, Phocian, Ixion, and Cato II.?

12. What are the allusions to Pius Quintus, Castor and Pollux, Atalanta, Jason, Falinus, and Midas?

English Language.

ANGLO-SAXON CHRONICLE, PARKER MS. (EARLE'S EDIT.), ANNALS 978 TO 1070; PIERS PLOWMAN, B. TEXT (SKEAT'S EDITION), PASSUS VI. AND VII.

1. How do you account for the vowel change in the second and third person singular present indicative of Anglo-Saxon strong verbs? Under what circumstances does this change take place?

2. Explain the terminations of the words: *kingdom, lordship, manhood, kindred, landscape, bishopric, wearisome, stedfast, piecemeal.*

3. Translate:

ðú móst sendan hraðe
beágas wið gebeorge; and eów betere is
ðaet gé ðisne gárráes mid gafole forgyldon
ðonne wé swá hearde hilde dáelon.
Ne ðurfe wé us spillan, gif gé spédað tó ðám.

Comment on the constructions underlined, and write a note on the uses of the word wið.

4. Translate, explaining all difficulties of construction, Parker MS., annals 993, 1001, 1031, 1066, 1070.

5. Translate into Anglo-Saxon:

Then, however, the king refused for some time, until the people who were with the earl were much stirred up against the king, so that the earl himself quieted them with difficulty. Then went thither the bishop and the wise men, both within and without the town, and counselled that hostages should be secured on either side, and it was so done.

6. Render into modern English: *Piers Plowman,* Passus VI., ll. 102—118, 147—165, 280—297; Passus VII., 76—86, 138—150.

Parse, *mysbede,* VI., l. 46; *konne,* l. 70; *yworth,* l. 84; *forȝelde,* l. 279; *alle,* VII., l. 5; *hailsed,* l. 160. Give the meaning and derivation of, *shedyng,* VI., l. 9; *hoper,* l. 63; *balkes,* l. 109; *eyleth,* l. 130; *botened,* l. 194; *myster,* VII., l. 7; *motyng,* l. 58; *wawe,* l. 79; *ȝarketh,* l. 80.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline fully the following: *aliquis, quis, nemo, nullus, iste, hic.*

2. Give the Latin cardinal numbers from ten to twenty inclusive. Translate into Latin: 479, 599, *seventh, nineteenth.*

3. Give the first person singular of the future and perfect indicative, and the imperfect subjunctive, of the following verbs: *moneo, utor, fruor, capio, puto, fingo, obliviscor, volo, fio.*

4. Translate carefully: *in diem, de sententia, de novo, de facto, ex lege.*

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 453—468.

CAESAR, *de Bell. Gall.* III. c. 16.

6. Give a short account of the following: Sinon, Cassandra, Laocoon, Achilles, Ulixes.

7. Translate into Latin:

(i) None of the prisoners escaped, though they were carelessly guarded.

(ii) After the bridge was built, they crossed the river, and took up their quarters on the further side.

(iii) The whole tribe revolted against the Romans, and were with difficulty subdued.

(iv) He entreated them to spare his life, and promised that he would never take up arms against them again, but they would not listen to him.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Explain the meaning of (i) heteroclite, (ii) defective nouns, and give instances of each.

2. Explain the formation of adverbs in Latin. Give illustrations.

3. Give the first person singular of the future, imperfect and perfect indicative, and the imperfect subjunctive of the following: *utor, fruor, pascor, dono, morior, moneo, dico, sentio, audior.*

4. Classify the Latin conditional sentences. Give illustrations.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid*, II. 453—468.

LIVY, XXI. c. 40.

6. Give a short account, with dates where necessary, of all you know as to the life of Livy, and estimate carefully his value as a historian.

7. Translate, if possible without a dictionary:

(i) The barbarian army was drawn up in three divisions, of which the king commanded the centre, while the auxiliary troops were posted on the wings.

(ii) If this involved only the safety of a private citizen, I should not be here to address you, but the whole safety of the state, as well as the power of your empire, rests on your decision.

(iii) Nunc est bibendum, nunc pede libero
pulsanda tellus; nunc Saliaribus
ornare pulvinar deorum
tempus erat dapibus, sodales.

Latin and Greek.

Higher Local.

1. Classify the Latin conditional sentences. Give illustrations.

2. Give an account of the origin and development of the Latin gerund and gerundive.

3. Explain the origin and use of (i) the ablative of price, (ii) the genitive of price, (iii) the ablative absolute.

4. Mention any general rules to be observed in translating from English into Latin.

5. Give a short account of the life and philosophy of Horace.

6. How many negatives are there in Greek? Distinguish carefully between their meaning and usage. Give illustrations.

7. Explain the force of the Greek aorist in oblique moods. Give illustrations.

8. Classify the uses of the participle *ἄν*.

9. State the general rules for the conversion of direct into indirect speech in Greek.

10. Give an account of the various theories that have been put forward as to the remaining plays of the trilogy of which the *Prometheus Vinctus* formed part.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully the following: *ἀγαθός, ἄνους, χρυσοῦς, εὐσεβὴς.*

2. Translate carefully into Greek:

Through the wood.—On account of him.—With his father.—After the war.—Along the river.

3. Give the first aorist and future middle of the following: *λύω, γράφω, τύπτω, πλέκω, διδάσκω, λέγω.*

4. Explain the construction of *ὥστε* with the infinitive. Give illustrations.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

XENOPHON, *Anabasis*, IV. c. vi., §§ 1, 2, 3, and §§ 7, 8.

EURIPIDES, *Heracleidae*, 539—546 and 597—607.

6. Explain the structure of the iambic trimeter, and scan any two lines of the *Heracleidae* that you remember.

7. Translate into Greek:

(i) We shall go in order to see you.

(ii) He came early so that he saw me.

(iii) When the sun shines I will go.

(iv) Do not forget me, my child.

8. Translate:

(i) *ὁ δὲ εἶπεν αὐτοῖς, τί θέλετε ποιῆσαί με ὑμῖν; οἱ δὲ εἶπον αὐτῷ, Δὸς ἡμῖν, ἵνα εἷς ἡμῶν ἐκ δεξιῶν σου καὶ εἷς ἐξ εὐωνύμων σου καθίσωμεν ἐν τῇ δόξῃ σου.*

(ii) *Χάρις δὲ τῷ Θεῷ τῷ διδόντι τὴν αὐτὴν σπουδὴν ὑπὲρ ὑμῶν ἐν τῷ καρδίᾳ Τίτου· ὅτι τὴν μὲν παράκλησιν ἐδέξατο, σπουδαίοτερος δὲ ὑπάρχων, αὐθαίρετος ἐξῆλθε πρὸς ὑμᾶς.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate and decline fully: *pious man, much gold, no one, black hair, great mind.*

2. Give all the infinitives, active, passive, and middle, of *βλάπτω, λέγω, ἵστημι, δίδωμι, μανθάνω.*

3. Give the aorist imperative active and passive of *λύω, διδάσκω, πλέκω, λαμβάνω.*

4. What is meant by *relative attraction*? Give illustrations.

5. Translate, with short marginal notes, explaining carefully (i) difficulties of construction, (ii) allusions:

PLATO, *Apology*, c. xxiii.

EURIPIDES, *Heracleidae*, 539—546 and 597—607.

6. Give a short outline of the plot of the *Heracleidae*. By what other poets has the story been treated?

7. Translate (if possible without a dictionary):

(i) It is not for the sake of saving my own life that I speak to you, but to entreat you not to sacrifice the State to your present resentment.

(ii) The general ordered the cavalry to advance, but the foot soldiers to wait for a time till the day broke.

8. Translate:

(i) *ὁ δὲ εἶπεν αὐτοῖς, τί θέλετε ποιῆσαί με ὑμῖν; οἱ δὲ εἶπον αὐτῷ, Δὸς ἡμῖν, ἵνα εἰς ἡμῶν ἐκ δεξιῶν σου καὶ εἷς ἐξ εὐωνύμων σου καθίσωμεν ἐν τῇ δόξῃ σου.*

(ii) *Χάρις δὲ τῷ Θεῷ τῷ διδόντι τὴν αὐτὴν σπουδὴν ὑπὲρ ὑμῶν ἐν τῇ καρδίᾳ Τίτου· ὅτι τὴν μὲν παράκλησιν ἐδέξατο, σπουδαίοτερος δὲ ὑπάρχων, αὐθαίρετος ἐξῆλθε πρὸς ὑμᾶς.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate into French:

Napoleon was born in the island of Corsica, and died in the island of Elba.—The more you have the more you want.—I was afraid lest they should not come in time.—As soon as my friends have arrived, I shall go and see them.—Good as she is to her own family, she is not charitable to the poor.—A little while after, the king married a Spanish princess.—Have you no better pens to give me?—Having read the letter, she began to cry bitterly.

2. Illustrate the position of direct and indirect complements, by giving the French of the following:

You have given them to my sister, have you not? No, she will send them to us next week. I will send some of them there (*y*). Give him some of it.

3. Give the primitive tenses of *médire* and *nuire*, and conjugate negatively *s'en retourner*.

4. Shew the different renderings of *which* in

The horse of which you speak.—The book which you have just read.—The carriage on the box of which I was sitting.—Of which you were speaking.—The studies to which I apply myself.

5. Translate: *Le Directoire*, p. 37, l. 1, "La veille du jour," to p. 38, l. 10, "que son malheur."

(i) Account for *on s'excite, les uns les autres.*

(ii) *La plupart... quittèrent.* Are verbs following *la plupart, la moitié*, &c., always plural?

(iii) Comment on *conduits* (l. 28), *le matin* (l. 23), *arrêtées* (l. 10), *que présidait* (l. 26).

6. Give an account of the "Army of the Rhine" and the "Army of Italy," and compare the two.

7. Translate:

Les Emigrés cernés de toutes parts, et *fuyant* à la nage. Le ministère Anglais devait, plus que *tout* autre gouvernment comprendre l'histoire de la révolution de France, si semblable à celle d'Angleterre: mais *l'on* dirait qu' à cause de l'analogie *même* il voulait s'en montrer d'autant plus l'ennemi.

(i) Why does *fuyant* not take the plural?

(ii) What part of speech is *tout* here? Is it ever variable used like this?

(iii) Give the different meanings of *même* and the rules applying to its use.

(iv) Explain the form *l'on*, and give other examples of it.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Translate into French:

When Louis XIV. set out to lay siege to Mons he ordered his two historians, Racine and Despréaux, to follow him. Preferring a more tranquil life, they managed to stay at home. The king, on his return, sent for them and reproached them for not having gone with him. "Sire," ingeniously replied the poet, "as we only possessed clothes suitable to the city, we had to order some for the field, but the towns, to which your majesty laid siege, were much sooner taken than our coats were made."

2. Translate: *Le Directoire*, p. 34, l. 32, "Le Directoire en tant," to p. 35, l. 23, "par elles-mêmes." Also p. 37, l. 23, to p. 38, l. 10.

(i) Distinguish between *user* and *user de*, *douter* and *se douter*.

(ii) Give sentences illustrating any other meanings of the words *trait*, *bruit*, *honnête*, *tenait* (p. 38, l. 2).

(iii) Write out the verbs *résoudre*, *se plaire*.

3. What were the results of the "coup d'état du 18 Fructidor"?

Junior Paper, No. 6.

4. Translate: *Le Misanthrope*, Act III. Sc. v., "*Arsinoé.*—Il n'est pas nécessaire," to "à tous vos intêrets." Also, Act II. Sc. vii., "*Alceste.*—Et que voudriez-vous madame, que j'y fisse?"

(i) From what source did Molière take this speech of Alceste's?

(ii) Write out the verb *essuyer*. Quote any other passage in this play where it has the same meaning as in *essuyer la cervelle*.

5. When was *Le Misanthrope* first represented, and with what reception did it meet? Mention the principal plays of Molière. Discuss his right to the title of "philosopher."

6. Give a short description of Act III. Sc. v. and Sc. vii.

7. Translate:

De quoi *s'avise-t'elle*. *Sans* en venir à bout. Je crois qu'il est fort peu d'emplois, dont je ne sois en passe. Il ne tiendra qu' à vous que nous ne continuions cet office fidèle. Faire bonne *mine* à mauvaise jeu. Et puis je *mais* des Soins qu'on ne va pas vous rendre? Un bel esprit. Touchez là s'il vous plaît. De grands *éclats*. Vous vous *targnez* d'un bien *foible* avantage.

Comment on the words in italics.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Le système féodal avait entretenu l'indépendance linguistique et littéraire des provinces; mais il était clair que du jour où le système féodal disparaîtrait au profit d'une monarchie une et centrale, les dialectes seraient entraînés dans sa chute, et supprimés au profit d'une langue commune.

Expand this statement fully, and shew what events influenced the form of this "langue commune."

2. Translate: *Histoire de la Littérature Française,* Vol. II. p. 185, "Il vaut mieux montrer ici," to p. 186, "reçu l'empreinte de ses pas."

3. Give an account of Corneille, mentioning his principal works, and shewing his influence on French drama.

4. Write a short French essay on La Fontaine or Boileau.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Translate into German:

Although the subject of these volumes does not comprehend the literary history of Europe anterior to the commencement of the fifteenth century, a period as nearly coinciding as can be expected in any arbitrary division of time with what is usually denominated the revival of letters, it appears necessary to prefix such a general retrospect of the state of knowledge for some preceding ages as will illustrate its subsequent progress.

2. Enumerate the principal writings of Wieland, Lessing, Goethe, and Schiller.

3. Name the authors of the following works: *Fiesco, Die Unsichtbare Loge, Die Abderiten, Genoveva, Clavigo.*

4. Translate:

Eine weitere, für den Kunstwerth unsers Gedichts fast entscheidende Frage ist die, ob die phantastischen Erscheinungen desselben für Allegoriën zu halten seien.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 57, "Ich war ein Ritter," to "meinen Speer."

Parse *Thier, bethränten Auges, Forst, strich, dem Wilde, vorgelegt, Seite, Speer.*

2. Write out in full the

(i) Indicative imperfect of *essen, graben, fliegen.*

(ii) Indicative perfect of *erscheinen, überraschen.*

(iii) Future perfect of *fassen, bestehen.*

(iv) Subjunctive imperfect of *kommen, dürfen.*

3. Decline fully: the beautiful flag, the long letter, the great emperor.

4. After which of the following is the order of verb and subject inverted? *oder, denn, darum, doch, aber, und.* Write a short sentence to shew how each is used.

5. Name the prepositions that sometimes take the dative and sometimes the accusative, and explain where each occurs.

6. Translate into English:

Im *Jahre* 777 hielt Karl zu Paderborn einen Reichstag; da *erschienen Boten* aus dem *fernen* Spanien, wo Araber herrschten, und baten Karl um *Hülfe* gegen den *grausamen* Abderahman. Gern folgte Karl dem *Rufe*, da er es für eine *Christenpflicht* hielt, wider die *Heiden* zu kämpfen.

Parse the words in italics.

Give the principal parts of all the verbs in this passage.

What cases follow *zu, für, wider*?

7. Translate into German:

Once there lived in a village a poor man who was a cowherd. One day, when his wife was taking the cows to the field, she had the misfortune to lose one. She looked and looked for it till late at night, but she could not find it, and she wandered about till she lost her way in the wood.

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 59, "Drum den Pilgerstab," to "er befahl."

Account for the cases of *seinen Herrn, dem Stein, mir (herauf), Schollen, die Strasse, des Weges.*

Account for the subjunctives *erwachse, werfe.*

2. Translate: *Der Staat Friedrichs des Grossen*, p. 35, "Das Mittel," to p. 36, "uns umgeben."

untergehen. Explain the exact meaning of this word.

umgeben. Distinguish between this word when separable and inseparable.

3. Translate:

(i) Immer lauter *wurde* der Schrei der Trauer und Bewunderung, mit welcher Deutsche und Fremde diesem Todeskampfe des umstellten Löwen *zusahen.*

(ii) Seit langen, langen Jahren *fanden* sie jetzt einen Held, auf dessen Kriegsruhm sie stolz *sein durften.*

Account for the place in the sentence of the words in italics.

4. Translate into English:

Noch neulich ist darüber gesteitten worden, wie weit sich das Recht des Einzelnen, zur Ausbildung der Sprache mitzuwircken, erstrecke. Dass einzelne Schriftsteller, besonders Dichter, durch ihr Beispiel einen unübersehlich grossen Einfluss darauf haben können, beweist die Geschichte der Sprachen. Auch hat man vieles anfangs als Sprachverderb verschrieen, was nachher Eingang gefunden und sich als wahre Veredlung bewährt hat.

A. W. v. SCHLEGEL.

5. Translate into German:

Rome was almost wearied out with the long siege, when Martius, a young Roman of noble birth, desired the senate to permit his passing the Tiber, and going into the hostile camp; only entreating that, if he should fall in the dangerous enterprise, his zeal for the public good should not be forgotten.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Explain the terms: *ten, tenth, minus, multiplicand, prime number, composite number, square of a number, factor, improper fraction, decimal fraction.*

2. Find the square of 365 and the cube of 417.

3. How many pounds of tea at 2*s.* 8*d.* per lb. must be given in exchange for 112 lb. of coffee at 1*s.* 2*d.* per lb. and 88 lb. of sugar at 4*d.* per lb.?

4. I sold 1512 articles for £690 7*s.* 6*d.*, making a total profit of £123 7*s.* 6*d.* Find the cost of each.

5. Multiply 42 mi. 6 fur. 180 yds. 2 ft. 6 in. by 164, and divide 76 tons 10 cwt. 3 qrs. 27 lb. 15 oz. by 81.

6. Find the cost of 47 yds. cambric at 14*s.* 9*d.* per yard, 58 yds. muslin at 3*s.* 8*d.*, 62 yds. Irish linen at 3*s.* 4*d.*, 75 yds. print at 1*s.* 10*d.*, 86 yds. serge at 2*s.* 2*d.*, 98 yds. dowlas at 1*s.* 7*d.*

7. Page 286, No. 9.

8. Simplify

(i) $1\frac{1}{3}+\frac{8}{9}\times\frac{4}{3}\frac{1}{4}+\frac{4}{5\frac{1}{10}}$;

(ii) $\frac{3}{5}$ of $\frac{4\frac{1}{6}}{5\frac{1}{7}}\backsim\frac{2}{3}$ of $\frac{15}{2}$;

(iii) $\frac{1\frac{4}{17}\times 6\frac{4}{5}}{3\frac{3}{5}-1\frac{2}{2}\frac{2}{5}}+\frac{2}{11}$ of $(2\frac{2}{5}-\frac{3}{4})-\frac{1\frac{3}{5}}{12}$;

(iv) $\cfrac{1}{2+\cfrac{1}{3+\cfrac{1}{4}}}$.

9. What fraction of £2 7*s.* 6*d.* is £1 7*s.* 8½*d.*? Also what fraction of 3 cwt. 2 qrs. 14 lb. is 3 cwt. 19 lb. 2 oz.?

10. A person after paying away one-third of his money together with £10, finds that he has left £15 more than its half. What money had he?

11. A cistern is filled by 3 pipes in 4, $8\frac{1}{2}$, and 15 hours respectively. In what time will they all fill it?

12. (i) $\cdot 8037 + 8\cdot 037 + 80\cdot 37 + 803\cdot 7 + 8037$;
(ii) $3760\cdot 279 - 423\cdot 0076$;
(iii) $\cdot 0568 \times 3\cdot 175$;
(iv) $5\cdot 43968 \div 35\cdot 6$.

13. If 432 and 750 be two among several factors of a number, what must I substitute for the latter if the former be altered to 540, in order that the final product be the same?

14. Find the square root of 23614·4689 and the cube root of 941·25.

15. What is the compound interest of £820 for $2\frac{1}{2}$ years at $4\frac{1}{2}$ per cent. per annum, the interest being paid half-yearly?

16. A debt is to be paid as follows: one-half in 3 months, one-fifth in 8 months, and the rest in 15 months. When should the whole be paid at once?

ANSWERS TO *MAY* PAPER.

1. 44 inches.

2. 1, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, : 1, 2, 3, 4, 5, 6, 8. 10, 12, 15, 16, 20, 24, 30, 40, 48, 60, 80, 120, 240.

3. £21, 121 square yards. 4. $1\frac{3}{5}$, $\frac{14}{45}$, $2\frac{377}{468}$. 5. $817\frac{1}{7}$, $\frac{11}{105}$.

6. ·7125, ·8$\dot{3}$, 7$\dot{6}$, ·5541$\dot{6}$, ·25, ·541$\dot{6}$, 1·25. 7. 161·933166, 1927·252396.

8. £53 11*s*. $9\frac{1}{2}$*d*.; £6 1*s*. 8*d*. 9. 18 cubic feet; 10 cwt. 5 lb.

10. $5\frac{5}{6}$ feet. 11. (i) 15; (ii) $6\frac{9}{16}$; (iii) $\frac{1}{7}$; (iv) 27. 12. £2700.

13. 6 hrs. 18 min. 14. $128\frac{10}{13}$.

15. 4 months $8\frac{7}{8}$ days. 16. 30 minutes.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Draw a straight line perpendicular to a given straight line from one of its extremities.

2. Construct a triangle of which the sides shall be equal to three given straight lines.

When alone is it possible to do this?

3. If two triangles have two angles of the one equal to two angles of the other, each to each, and the side opposite to the equal angles also equal, the triangles must be equal in every respect.

4. All the interior angles of any rectilineal figure together with four right angles, are equal to twice as many right angles as the figure has sides.

5. Equal triangles upon equal bases in the same straight line and towards the same parts are between the same parallels.

6. If the square described upon one side of a triangle equal the squares described upon the other two sides of it, the angles contained by these two sides is a right angle.

7. If a straight line be bisected and produced to any point, the square on the whole line thus produced and the square on the part of it produced are together double of the square on half the line bisected and of the square on the line made up of the half and the part produced.

8. From two given points on the same side of a line given in position, draw two lines which shall meet in a point in this line, such that their sum shall be less than the sum of any two lines drawn from the same points and terminated at any other point in the same line.

9. If one circle touch another internally in any point, the straight line which joins their centres being produced will pass through that point of contact.

10. Upon a given straight line describe a segment of a circle which shall contain an angle equal to a rectilineal angle.

11. From a given point without two indefinite straight lines given in position which meet in a point, draw a line such that the parts intercepted by the point and the lines may have a given ratio.

12. If two circles cut each other, the greatest line that can be drawn through the point of intersection is that which is parallel to the line joining their centres.

13. Inscribe an equilateral and equiangular hexagon in a given circle.

14. In right-angled triangles the rectilineal figure described upon the side opposite to the right angle is equal to the similar and similarly described figures upon the sides containing the right angle.

15. If two straight lines be cut by parallel planes they shall be cut in the same ratio.

16. Circles are to one another as the squares on their diameters.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 4—11 inclusive.
Higher Local work Nos. 6—13 inclusive.

1. Prove that the square root of a rational quantity cannot be partly a rational and partly a quadratic surd.

Shew that (i) $a^{\frac{1}{n}} \times b^{\frac{1}{n}} \times c^{\frac{1}{n}} = (abc)^{\frac{1}{n}}$;

(ii) $a^{\frac{p}{q}} \times a^{\frac{r}{s}} a = a^{\frac{p}{q}+\frac{r}{s}}$.

2. Divide $x^{\frac{1}{2}} - 3x^{\frac{1}{3}}y^{-\frac{1}{3}} + 3x^{\frac{1}{3}}y^{-\frac{1}{3}}$ by $x^{\frac{1}{3}} - 2x^{\frac{1}{3}}y^{\frac{1}{3}} + y^{-\frac{1}{3}}$.

3. Divide 28 into four parts in A.P. so that the sum of their squares shall equal 216.

4. If $\frac{l}{a-b} = \frac{m}{b-c} = \frac{n}{d-a} = \frac{p}{c-d}$, prove that $l+m+n+p=0$.

5. Find two numbers whose sum is 10 and the square of the reciprocals is $\frac{100}{441}$.

6. Solve the equations:

(i) $x^2+5x+8+2\sqrt{x^2+5x+15} = 113$;

(ii) $ax+by+cz = bx+ay+bz = cx+cy+az$;

(iii) $\frac{x}{a}+\frac{y}{b}+\frac{z}{c}=1, \frac{x^2}{a^2}+\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$.

7. Extract the square root of $25-\sqrt{96}$.

8. Insert 4 geometrical means between 4 and 972.

9. A boy spends his money in oranges. If he had bought six more for his money they would have cost him a penny less than they did. If he received four less for his money they would have cost a penny more. Find how much he spent.

10. Write down all the terms which contain

$$b^{n-5} \text{ in } (a+b+c+d)^n.$$

11. If $a:b::c:d$, shew that

(i) $\sqrt{a^2+b^2}:\sqrt{c^2+d^2}::\sqrt[3]{a^3+b^3}:\sqrt[3]{c^3+d^3}$;

(ii) $a^2-b^2:a(a-b)::c^2-d^2:c(c-d)$.

12. A tradesman marks his goods with two prices, one for ready money and the other for a credit of three months. Find what ratio the prices should bear to one another, allowing 4 per cent. compound interest.

13. Find in how many ways the letters in the words "Higher Local Examination" can be arranged so that the vowels shall be in their alphabetical order and the consonants in their alphabetical order.

ANSWERS TO *MAY* PAPER.

1. (i) $\frac{(a+b)(1+b-a)}{ab}$; (ii) $\frac{9a-c-8b}{(a-b)(b-c)(a-c)}$.

2. $a^3+3a^2b+3ab^2+b^3+3a^2c+6abc+3cb^2+3c^2a+3c^2b+c^3$;
$a^3-3a^2b+3ab^2-b^3+3a^2c-6abc+3cb^2+3c^2a-3c^2b+c^3$;
$a^3+3a^2b+3ab^2+b^3-3a^2c-6abc-3cb^2+3c^2a-3c^2b-c^3$.

3. $a=\frac{107-28x}{64-36x}$. 5. (i) $x=\frac{5}{3}$ or $-\frac{1}{3}$, or $x=0$ or 5; (ii) $x=9\frac{56}{189}$.

6. £68 5*s*. 7. $x^2-3a(9a^2-13)x+169=0$.

10. $(10+5)^{\frac{1}{5}}$. 11. Eight; ·8278724.

12. $\frac{Q-P}{P}$. 13. $x=\frac{7+\sqrt{41}}{2}$, or $x=\frac{7+\sqrt{13}}{2}$.

14. 55. 15. $\frac{8057}{241}$.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. The sine of an angle is $\frac{m}{n}$, find the other trigonometrical ratios; also find the ratios when the tangent of an angle is

$$\frac{m^2}{m^2+n^2}.$$

2. Prove that

(i) $\sin 2A = 2 \sin A \,.\, \cos A.$

(ii) $\sin (90° - A) = \cos A.$

(iii) $\sin (180° - A) = \sin A.$

(iv) $\sin 4A = 4 (\sin A \cos^3 A - \cos A \sin^3 A).$

3. Find the radius of a circle which touches one side of a triangle and the other sides produced.

4. Prove that $\tan A + \tan B = \frac{\sin (A+B)}{\cos A \cos B}.$

Express $\tan 8A$ in terms of $\tan A$.

5. Find an expression for the sine of an angle of a triangle in terms of the sides.

6. Solve the equations:

(i) $\sin 4\theta + \sin 6\theta = \sin 5\theta + \sin 7\theta.$

(ii) $\tan \theta + \cos 2\theta = \sin 2\theta.$

7. Name and describe the three different kinds of levers. Of which class is each of the following an example? an oar, a poker, a steel-yard, a pair of shears, and a cork squeezer.

8. If three forces acting at a point keep it in equilibrium, the forces must be equal and parallel to the sides of a triangle taken in order.

9. Find the horse-power of a steam engine which projects 80 four-pound shots in a minute with a velocity of 1000 feet per second.

10. A stream of water falls from rest from a height of 40 feet upon a smooth horizontal plane at the rate of 120 gallons per minute; find the pressure on the plane.

11. Define stable, unstable, and neutral equilibrium. Give an example of a body in each of the three positions of equilibrium.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY, TRIGONOMETRY, AND CONICS.

1. Define potential and kinetic energy. What energy is that possessed by a ball at the top of a house, a ball in motion, the spring of a watch?

2. Prove that every system of particles and every material body has a centre of gravity. Find the centre of gravity of a pyramid on a triangular base.

3. Enunciate and comment upon the third law of motion, and shew that the equation $P = mf$ is derived from it. Discuss the unit of force implied in this equation.

4. Describe and give an explanation of the phenomenon of the Harvest Moon. Account for the librations of the moon.

5. Explain clearly what is meant by the precession of the equinoxes, and shew that its immediate effect is to produce an uniform increase of longitude in all the heavenly bodies.

6. Shew that twilight is the effect of refraction. At what time of the year is twilight greatest, and at what time is there no twilight?

7. Find log ·489897, having given

$$\log 48{\cdot}989 = 1{\cdot}6900986, \quad \log 48{\cdot}990 = 1{\cdot}6901074.$$

8. The area of a rhombus is 1175686 sq. ft., and one diagonal is 458 ft.; find the other diagonal, the length of a side, and the height of the rhombus.

9. Define a conic section, its eccentricity, focus, and directrix. What is the value of the eccentricity in the case of an ellipse?

10. Can the following be conic sections? a straight line, two straight lines, a circle. Of which of the three usual forms are they, or any of them, particular cases?

11. A chord of the circle $x^2 + y^2 = c^2$ touches the circle

$$(x-a)^2 + (y-b)^2 = d^2;$$

find the locus of its middle point.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. Describe the metal calcium. Give the properties and uses of calcium oxide.

2. In what form is magnesium found, and how is it separated? What are (i) blende, (ii) galvanised iron?

3. Mention the most important laws of chemical combination, giving proofs.

(*b*)

4. Describe an experiment to prove that phosphorus is a reducing agent.

5. What is bleaching powder? What element combines with the colouring matter and destroys the colour? Describe the experiment.

(*c*)

6. Find the coefficient of friction if a weight just rest on a rough plane inclined at 45° to the horizon.

7. Explain the construction of a pump.

(*d*)

8. Explain the action of a barometer.

9. What is meant by the expressions *latent heat* and *heat of liquidity*? How is the latent heat of water, also that of steam, determined?

(*e*)

10. Describe shortly any experiments which shew the properties of the electric current.

11. Explain briefly the principles involved in the electric telegraph.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Compare the epidermis of the leaf of the hyacinth, the bean, and the hart's tongue fern.

2. What is a fruit? Describe and classify the fruits of cherry, gooseberry, apple, strawberry, and raspberry.

3. Refer the following plants to their natural order, giving the reason for so doing: vetch, poppy, lobelia, meadowsweet, speedwell, and oats. Describe the last in detail.

(*b*)

1. What chief characteristics distinguish the animals belonging to the sub-kingdom arthropoda? Shew with diagrams the relations and differences between a crab and a spider.

2. Explain what is meant by metamorphosis, and give examples of how it occurs.

3. Describe the nervous system of one of the arthropods and the eye of an insect.

(*c*)

1. With reference to rivers, explain the following terms: watershed, water-parting, basin, delta, tributary, confluence, estuary, bar. What is the cause of the winding course of many streams?

2. Enumerate and describe the different movements of the sea, stating how each is caused.

3. In what parts of England do oolite beds occur? What forms of animal life characterise this period?

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (*a*) *and in one at least of the subjects* (*b*) *to* (*g*). *No Student will be examined in more than three of the subjects* (*b*) *to* (*g*) *in one year.*

(*a*)

1. What is meant by a double decomposition as a mode of chemical reaction? Give examples of this and other sorts of reactions.

2. If the velocity of sound in any medium be 1200 at a temperature of 70° and 1165 at 60°, what is the velocity at the freezing point?

3. Classify and describe the different modes of central and axial development. Give examples of each in the animal world.

(*b*)

1. Describe the preparation and uses of alum, and compare the formula for potash alum with that of chrome alum and ammonia alum.

2. What is the difference between cast iron and wrought iron? How is iron converted into steel, and by what process is steel tempered?

(*c*)

1. A ball is projected horizontally with a velocity of 40 ft. per second. From the same point at the same instant a second ball is let fall. What distance will the balls be apart in 8 seconds?

2. A shaft a feet in depth is full of water. Find the depth of the surface of the water when one quarter of the work required to empty the shaft has been done.

(*d*)

1. Give the meaning of the following terms: *phytomer, caryopsis, zygospore, arillus, ligule, protonema, caulaure.*

2. How is increase of thickness effected in the stems of some monocotyledons? In what way does the process differ from that in dicotyledons?

(*e*)

1. What general principles should be thought of in the classification of animals? Support your view of a model classification by examples.

2. Describe the pectoral and pelvic girdles in birds, pointing out the peculiarities which distinguish them from those of the other four classes of vertebrates.

(*f*)

1. Trace the influences under which food is brought from the time it enters the mouth until it leaves the stomach. Compare the action of gastric juice on proteid substances with that of pancreatic juice, stating the chemical properties of each. Describe in detail the structure of a salivary gland.

2. Discuss the phenomena of the pulse.

Explain the movements by which respiration is effected, and trace the changes which alter the character of inspired air to those of expired.

(*g*)

1. Classify the igneous rocks under the heads (i) crystalline, (ii) half-crystalline (iii) glassy. State which of these groups contain rocks which have cooled quickly on the surface of the earth, and which are those which have cooled slowly deep in the earth.

2. In what areas is volcanic agency recognised in Great Britain? By what characters are they known to be of volcanic origin?

Logic.

Higher Local.

1. What do you consider the best definition of the term *logic*? Give reasons for your opinion.

2. Discuss the question whether names are the names of things or of our ideas of things, taking the name *spirit* to illustrate your answer.

3. Point out the difference between grammar and logic, and analyse fully:

> "The mind is its own place, and in itself
> Can make a heaven of hell, a hell of heaven.
> What matter where, if I be still the same,
> And what I should be; all but less than he
> Whom thunder hath made greater?"

4. Write from memory the rules of the syllogism, and make eight syllogisms, each of them breaking one of these rules.

5. What is meant by *logical division*? Distinguish it from *partition* and from *metaphysical division*.

6. Point out any fallacies in the following arguments:

(i) A schoolmaster, if he is successful, must be either very gifted or very patient. Dr. Arnold was very gifted, therefore he was not very patient.

(ii) I see at once that this is not your child, for he has not a feature which resembles yours.

(iii) My friend, Mrs. A., had a servant who had been on the stage: she found that this servant stole spoons. She therefore dismissed him, and has freed herself from the possibility of having her spoons stolen by refusing to engage servants who have been on the stage.

7. What answers have been given to the question as to what is the basis for belief in the Law of Causation, and what proofs do we now possess of the truth of this law?

Constitutional History.

Higher Local.

SPECIAL PERIOD, 1199—1307; GENERAL.

1. Give an account of the coronation of John.
Give the terms of the oath taken by him on that occasion.
2. Examine the nature of the form of government established by the Provisions of Oxford.
3. Trace the dispute as to the claim to Scotch homage to the end of the reign of Edward III.
4. Describe the system of local government during the Anglo-Saxon period.
5. Group A, 6 and 7.
6. Describe the origin of the Cabinet.

Political Economy.

Higher Local.

1. Explain and criticise the following:
(i) "Men trading with borrowed capital seem likely to displace to a great extent those trading with their own."
(ii) "Retail prices fluctuate less than wholesale prices."
(iii) "A fall in the rate of interest tends to increase auxiliary capital relatively to remuneratory."
(iv) "Workmen require more technical knowledge, and more general education, than in old times, but less technical skill."
(v) "The amount of wealth produced may be affected by the manner in which wealth is distributed."
2. Is there any difference between monopoly and scarcity values? Shew by diagrams how monopoly values are determined.
3. "Value is governed by the expenses of production." "Value governs expenses of production." Discuss these statements. Are they both true?
4. Explain why, under existing circumstances, there are considerable local variations in the price of land, and in the price of labour.
5. Take any commodity produced at present in England, and mention some of the circumstances under which the demand for it would be increased.
6. Tabulate the direct taxes levied at present in England; trace, as far as you can, their economic results, and suggest improvements as to the commodities taxed, and the manner in which they are taxed.

Political Economy.

Senior.

1. What is meant by *a commercial panic*? It is sometimes said that commercial panics are caused by over-production. Is this true? What do you consider are the conditions under which a panic is likely to take place?

2. "In the same town similar commodities are sometimes sold at different prices." Explain this fact.

Do you think there are any conditions under which this would be impossible? If so, what are they?

3. "Formerly wages in the south of England were higher than those in the north, now, wages in the north are higher than those in the south." What has caused this change?

4. Higher Local Paper, No. 1, (ii) and (iv).

5. Plush became suddenly fashionable. What was the economic effect of this sudden change in fashion (i) on the manufacture of plush, (ii) on the price of plush, and (iii) on the profits of the plush manufacturers?

6. Explain fully the law of demand and supply.

7. Give a short account of trades' unions. What are the principal changes which have taken place in them since they were first started? Give some statistics concerning their rapid growth. Why have they, on the whole, objected to piece work? Criticise the arguments which they generally bring forward on this subject. Why are masters anxious to introduce piece work?

Music.

Junior and Senior.

Note.—*Junior Candidates answer the first eight questions only.*

1. Explain the difference between major, minor, augmented, and diminished intervals, and give four examples of each.

2. Which intervals are often called perfect, and why?

3. What is meant by inverting an interval, and what does each kind of interval become by inversion? Illustrate your answer by examples.

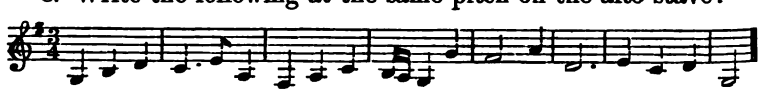
4. Make a table of all the diatonic intervals in the scale of B flat major. Write a large *M* over those that are major, and a small *m* over those that are minor.

5. Give an example of a diatonic interval in each of the seven keys, with sharps, and in each case name another key in which the same interval would be chromatic.

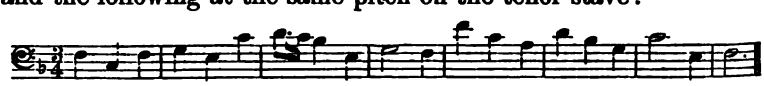
6. Define *concord* and *discord* as applied to intervals, and say which intervals belong to either class.

7. When are two intervals said to be complementary to each other? Give an example.

8. Write the following at the same pitch on the alto stave:



and the following at the same pitch on the tenor stave:



9. What is the smallest number of sounds that can form a chord, and what must be the intervals between them? Does the nature of these intervals ever vary, and if so, how?

10. What is the name given to such a chord, and how may it be figured?

11. What is meant by the *root* or *ground-note* of a chord?

12. Are the root and the bass of a chord always the same? If not, when and why do they differ?

13. What do the figures $\frac{6}{3}$ and $\frac{6}{4}$ under a bass note imply?

Music.

Higher Local.

1. What are the essential features of the sonata, symphony, concerto, and overture? Name an example of each of these forms of composition by Beethoven, Mozart, Schumann, and Mendelssohn.

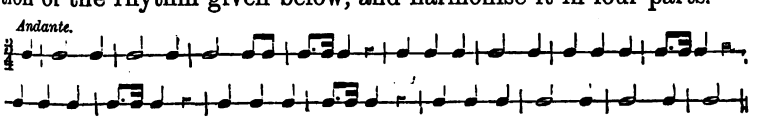
2. What instruments form the string quartet? In what relation do they stand to each other as regards pitch, and on what staves should their respective parts be written?

3. What do you understand by the terms *chamber music* and *programme music*?

4. Analyse the chords of the first 20 bars of the *Andante* of Beethoven's Pianoforte Sonata in G major, Op. 14, No. 2. Describe each chord fully; give the ground-note and the key to which the chord belongs; when inverted, give the number of the inversion; and refer to the chords as ch. 1, ch. 2, &c.

5. Transpose the first 16 bars of the *Adagio* of Beethoven's Pianoforte Sonata in C major, Op. 53, into the key of D flat major.

6. Write a melody in D major which shall be an exact imitation of the rhythm given below, and harmonise it in four parts.



7. Write an example (original), four bars in length, of each of the following: sequence, syncopation, pedal-point, inverted pedal, double pedal.

8. Describe the time, pace, and rhythm of the following dance forms: *minuet, sarabande, polonaise, gavotte, waltz, jig, bourrée.*

Teacher's Examination.

The Theory, History, and Practice of Education.

Special Subjects: *Locke's Theory of Education*; *The Life and Works of Pestalozzi.*

1. What would you consider to be the right and the wrong methods of treatment in the case of a child with a stubborn will?

2. How would you guard children against the evils that spring from a great love of admiration?

3. What are the mental and physical effects arising from the feeling of fear in children?

4. "The thought of any age determines the education of the age which is to succeed it." Shew how Lord Bacon's influence may be cited as an example of this truth.

5. Draw up a brief summary of the most important educational movements in the way of reform that have taken place since the revival of learning, connecting with each the name or names of those who took the lead in it.

6. What studies would Herbert Spencer consider should take the chief place in a sound system of education?

7. What did Rochow do for popular education in Germany?

8. What does Locke say about travel as a part of education?

9. Children are deeply affected by their surroundings. How should this fact be turned to account in the arrangements of class-rooms and school buildings?

10. What errors are chiefly to be avoided in framing questions for a class? Would you allow note-taking during the lesson or defer it till after the lesson had been given? Give reasons for your answer.

11. What studies will best exercise and train the faculty of imagination and conception? What are the instruments through which this faculty can be trained?

12. What are the chief reasons why the study of physiology and the laws of health should form part of the preparation of teachers for their work?

GENERAL EXAMINATION PAPERS FOR CHILDREN.

English History.

Ages 7—10 work Nos. 1—4 inclusive.
„ 10—12 „ „ 1—6 „
„ 12—14 „ „ 3—8 „
„ 14—16 „ „ 3—9 „ or Senior Paper, page 244.

1. Describe two scenes in English History, one before and one after the death of Edward III.

2. Give the names and dates of accession of the kings of England from William the Conqueror to Victoria.

3. Explain the term *civil war*, and mention any occasions on which there have been civil wars in England.

4. By what sovereign was Magna Charta granted? Describe as fully as possible the objects of the Charta.

5. Give a short account, with dates of all the battles you mention, of the Scotch wars of Edward I. and Edward II., or the French wars of Henry V. and Henry VI.

6. Enumerate the battles in the Wars of the Roses, and name the kings of the Yorkist and Lancastrian dynasties.

7. What circumstances led to the invasion of the Spanish Armada? Give its date, the leaders on both sides, and its results.

8. What were the chief points in dispute between Charles I. and his Parliament? Name the most important Royalist and Parliamentary leaders. Give the dates and results of the battles of Newbury, Naseby, Marston Moor, Edgehill, and Dunbar.

9. Give a short account of Perkin Warbeck, Wolsey, Mary Queen of Scots, Strafford, and Oliver Cromwell.

Geography.

Ages 8—12 work Nos. 1— 6 inclusive.
„ 12—16 „ „ 4—10 „

1. Name four of the towns nearest to you, stating in what direction they lie (*i.e.* N. S. E. or W.) and what is the distance to them.

2. Describe the course of the Severn, Thames, Clyde, Forth, and Shannon. Name three towns on each.

3. Between what counties are the Nore, the Wash, the Menai Straits, Cheviot Hills, Firth of Tay, the rivers Tamar, Tees, and Mersey?

4. Where are the following towns; on what river is each, and for what noted? Birmingham, Cardiff, Norwich, Chatham, Northampton, Burslem, Oxford, Canterbury, Woolwich, Liverpool.

5. Where are the Orkney Isles, Negropont, Bermudas, Aden, Cape Colony, Canada, Ceylon, Jamaica, Auckland New South Wales?

6. In an outline map of Europe give the mountains, rivers, lakes, the names of the countries and their capitals.

7. Name the principal islands off the coast of Africa, stating to what countries they respectively belong.

8. Describe shortly the mountain system of Asia.

9. Name the chief rivers of North and South America, and state in what directions they flow.

10. To what causes may the trade winds be ascribed? In what directions do they blow north and south of the equator?

Grammar.

Ages 8—10 work Nos. 1—5 inclusive.
„ 10—12 „ „ 3—7 „ also 9 (i).
„ 12—14 „ „ 4—9 „

1. State what part of speech each word in the following sentence is. Give your reason for thinking it so:

The ice was broken this morning by some mischievous boys.

2. What is the subject of the above sentence? What is said about it?

3. Write from memory ten or twelve lines of poetry, and underline every verb in them.

4. Define a noun, pronoun, verb, and adverb. Name the inflexions of each.

5. Decline the first and third personal pronouns in the singular and plural, also the relative pronoun, *who*.

6. Give the present, past, and past participle of the verbs, *make, meet, shine, awake, write, chide, slay, swim, strike, spring*.

7. Give three examples of complex sentences, underlining the principal sentence in each. Give three examples of compound sentences.

8. Distinguish between an adjectival and an adverbial sentence, giving examples of each.

9. Analyse, parsing the words in italics:

(i) *Not* a drum *was heard*, not a funeral note,
As his corse *to* the *rampart* we hurried
Not *a* soldier discharged his farewell shot
O'er the grave where our hero we buried.

(ii) Fairest Cordelia, that art most rich being poor,
Most choice, forsaken, and most loved, despised;
Thee and thy virtues here I seize upon;
Be it lawful, I take up what 's cast away.

Latin.

Ages 10—12 work Nos, 1— 6 inclusive.
„ 12—14 „ „ 3—10 „
„ 14—16 „ Junior Paper, Page 251.

1. Decline, fully, giving gender and meaning, one noun of each of the Latin declensions.

2. Give the genitive and dative singular and plural of the following: *hic, ille, nullus, unus, alius, alter, nemo.*

3. Distinguish between *i*-nouns and consonant nouns of the third declension in Latin, and decline the following: *clavis, animal, mare, civis, homo.*

4. Translate carefully into Latin: a good father, of a beautiful mother, in the house, to the city, from the camp, as far as the wood.

5. What is meant by (i) an active, (ii) a passive, (iii) a deponent verb? Give an instance of each.

6. Give the imperfect indicative and present subjunctive active of the following: *amo, dono, moneo, dico, sentio.*

7. Give the first person singular of the future and perfect indicative passive of the following: *puto, doceo, audio, fingo.*

8. Translate into Latin: 71, 49, 10, 175.

9. Give the gerund and supines of the following: *moneo, habeo, censeo, puto, audio, capio.*

10. Translate into Latin:

(i) Go to the city and tell your mother to come.
(ii) The boys will go to the wood to-morrow.
(iii) Who is there?
(iv) I, said the woman.
(v) The good child obeys its parents.
(vi) The bad child will not be happy.
(vii) The moon is smaller than the sun.

French.

Ages 7—10 work Nos. 1— 6 inclusive.
„ 10—12 „ „ 3— 9 „
„ 12—14 „ „ 7, and 9—13 inclusive.
„ 14—16 „ „ 13 and Junior Paper, Page 256, omitting Questions 5 and 6.

1. Which are the primitive tenses of a verb? Give the preterite, future, and subjunctive present of *mourir, acheter.*

2. Give the feminine of *jaloux, cruel, poli, vieux.* Also the masculine of *grecque, sèche, franche.*

3. How do you form the plural of nouns ending in *al, au, x*? Give two examples of each.

4. Translate into French:

A little girl was buying flowers in the street.—Here are two pens, this one is new, but that one is old.—What is it you have there?—A beautiful bird, which I have found.—Does she learn French?—Have I a new dress?

5. Give the French for 5, 10, 15, 18, 20, 32, 49, 70, 83, 90, 100, 1882.

6. Translate:

Tu as perdu ton père et ta mère, c'est triste; moi j'ai vu mourir mon fils, c'est triste et horrible, mettrez-vous votre habit noir? Que fait ce jeune homme? Vous dites que vous avez raison. Quelques-unes de ces villes sont très-grandes.

7. Give the present and perfect participles of *plaire, courir, fournir, suffire, devoir, croître, naître, savoir, résoudre, coudre, agréer.*

8. Translate:

En traversant le beau parc de Vincennes, Louis regardait en soupirant cette neige si blanche si ferme, et qui craquait si délicieusement sous les pieds, cette neige qui aurait fait de si belles balles, et de si grosses bombes; puis il apercevait de loin à travers les arbres, ses petits compagnons courant çà et là *se livrant* (fighting) cette bataille à laquelle il avait rêvé toute la nuit; il les voyait s'attaquer, se défendre, reculer, s'avançer, se rouler à terre; puis il entendait leurs cris de joie qui arrivaient de loin jusqu' à lui.

(i) Explain why *laquelle, blanche, toute* should be feminine.

(ii) Why is it *de belles balles*, and not *des*?

(iii) How are reflective verbs always declined? Write out the indicative perfect of *se rouler*.

9. Translate:

Your letters were on the table this morning, but I have not seen them.—My old books and boxes have been sold.—Give it to me.—Have you any ink? Yes, I have some.—What time is it? It is half-past three o'clock.

10. Give the plural of *contre-coup, belle-étoile, arc-en-ciel, essuie-plume, garde-robe, grand'mère, passe-temps.* Give the rules accounting for your answers.

11. Of what gender are nouns ending in consonants, in *ion*, in *eur*, in *té*? Give the English and gender of *dent, souris, naïveté, silence, traité, foi, page, voile.*

12. Translate:

Ensuite nous descendîmes l'escalier. Elle me montra la chambre en bas, où couchait son père, leur petite cave, et la ouvrant sur le verger, et puis elle me recommanda ses rosiers, disant que c'était le principal article, et qu'elle m'en voudrait beaucoup, si je ne les soignais pas bien. Je pensais: "Ils seront bien *soignés*, mais à quoi cela *servira-t-il*, puisque tu pars?" Et pourtant je sentais dans mon cœur comme une bonne espérance qui revient doucement; je m'écriais en moi-même: "Mon Dieu! est ce possible que tout *soit* fini."

(i) Comment on the words in italics.

(ii) Give the subjunctive perfect of *je m'écriais.*

(iii) *En, même.* Give sentences illustrating the different meanings of these words.

(iv) Give the primitive tenses (first person) of *disant, voudrait, soignais.*

(v) *Doucement.* How are adverbs formed from adjectives?

13. Translate:

Voltaire and Piron had been spending some time together in a country house. One day Piron wrote on Voltaire's door, "Rogue." As soon as Voltaire saw it, he proceeded at once to visit Piron, who said to him, "What chance procures me the pleasure of seeing you?" "Sir," answered Voltaire, "I saw your name on my door, and I am come to return your visit."

German.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—14 „ „ 3—9 „
„ 14—16 „ Junior Paper, Page 259.

1. Decline fully the article *der, die, das.*

2. Translate into German and decline: *the room, the table, a book, my house.*

3. Decline *das kleine Fenster, der grüne Baum, mein schönes Buch, eine grosse Feder.*

4. Write out the (i) present indicative of *sehen, haben, sein*; (ii) imperfect indicative of *kommen* and *stehen*; (iii) future indicative passive of *schlagen* and *lieben.*

5. How are passive verbs conjugated in German?

6. Translate:

(i) Will you come into the garden?
(ii) Where are the three flowers I gave you?
(iii) Have you seen my brother?
(iv) If you see him will you tell me?
(v) I do not know where he is.
(vi) Will you come with me?

7. Translate:

Ich bin so gar ein *armer Mann*
Und gehe ganz allein.
Ich *möchte* wohl nur enimal *noch*
Recht *frohen Muthes* sein.

In meiner lieben *Eltern Haus,*
War ich ein *frohes* Kind;
Der bittre Kummer ist mein *Theil,*
Seit sie *begraben sind.*

Parse the words in italics.

8. Explain what is meant by separable and inseparable verbs. Which of these are separable and which inseparable? *ausgehen, bestehen, umbringen, abreisen.*

9. Translate:

"My father of glorious memory," said a young wolf to a fox, "was a perfect hero. What a terror he made himself to the whole neighbourhood! He triumphed successively over two hundred enemies."

Arithmetic.

Ages 8—10 work Nos. 1— 6 inclusive.
„ 10—12 „ „ 1— 8 „
„ 12—14 „ „ 4—10 „
„ 14—16 „ Junior Paper, page 261.

1. To three thousand four hundred and seventy-nine add five million one hundred and two thousand three hundred and fifty-six. From the result take four hundred and sixty-eight thousand and five hundred and nine. Multiply the remainder by 12, and express the result in words.

2. Add together 42769, 138, 249762, 13758, 6420, 325784; also £42 14*s.* 7½*d.*, £3 11*s.* 9¼*d.*, £6 18*s.* 9¾*d.*, £27 15*s.* 11½*d.*

3. Find the continued product of 2, 14, 17, 18, and 5.

4. Divide 12768439 by 7, also by 39.

5. Write from memory, Long measure, Avoirdupois weight, Troy weight, and Square measure.

6. Divide 739 qrs. 4 bush. 2 pks. 1 gall. by 11.

7. Explain the terms: *fraction, improper fraction, numerator, denominator, mixed number.*

8. Reduce to improper fractions $3\frac{1}{8}$, $4\frac{2}{11}$, $6\frac{13}{17}$, $11\frac{25}{27}$, $14\frac{19}{40}$; also to whole or mixed numbers $\frac{427}{11}$, $\frac{518}{29}$, $\frac{35}{12}$, $\frac{150}{30}$, $\frac{76}{17}$.

9. Give rules for the addition, subtraction, multiplication, and division of fractions, and find the sum, difference, and product of $3\frac{8}{11}$ and $8\frac{1}{4}$, and the quotient of $3\frac{8}{11} \div 8\frac{1}{4}$.

10. Simplify

(i) $(\frac{1}{2} \times \frac{3}{8} + \frac{3}{7} \times \frac{2}{5}) - (\frac{2}{7} \times \frac{5}{9} - \frac{1}{8} \times \frac{4}{11})$;

(ii) $\frac{15}{16} \times 7\frac{3}{5} + \frac{3}{17}$ of $10\frac{1}{5} - \frac{5}{7}$ of $2\frac{9}{10}$;

(iii) $(2\frac{8}{5\frac{9}{3}} \times \frac{5\frac{9}{3}}{6\frac{8}{3}}) \div (\frac{1}{6} \times 4 \times \frac{2}{3})$;

(iv) $\dfrac{2\frac{1}{3} \times 4\frac{1}{5}}{6\frac{2}{3} \text{ of } 1\frac{3}{2}} \times \dfrac{4\frac{2}{3} \text{ of } 3\frac{3}{4}}{12\frac{1}{2} \text{ of } 1\frac{1}{5}}$.

Algebra.

Ages 10—12 work Nos. 1— 7 inclusive.
„ 12—14 „ „ 4—11 „
„ 14—16 „ Junior Paper, Page 265.

1. Explain the terms: *coefficient, factor, index, power, product, like terms.*

2. Find the value of, when $a=2$, $b=3$, $c=4$, $d=5$, $f=0$,

(i) $a^2+b^2+c^2+d^2+f^2$;

(ii) $3a^3b+6ab^2+8abcd+9abcf$;

(iii) $\frac{a^2+b^2}{c^2}+\frac{d^2+c^2}{a^2}+\frac{f^2+c^2}{d^2}$.

3. Multiply $a^4+4a^3b+6a^2b^2+4ab^3+b^4$ by $a-b$, and divide the product by $a+b$.

4. Divide $a^8+2a^6+3a^4+2a^2+1$ by $a^4+2a^3+3a^2+2a+1$.

5. Add together $x^2+y^2+2xy+yz+xz$, $3x^2-y^2+4xy-yz+xz$, and $-2x^2+4y^2-5xy+4yz-3xz$.

6. Subtract
$a^2+2ab+b^2-c^2+2cd+d^2$ from $2a^2-4ab-2b^2+4c^2-3d^2+2ad$.

7. Find the factors of

(i) x^2-121; (ii) a^4-b^4;

(iii) $a^3-3a^2b+3ab^2+b^3$; (iv) $x^2-14x+49$;

(v) $x^2-5x-84$.

8. Simplify:
$a^2-[4ab+a-b+\{a-b+c-(a+b)-(4ab+cd)\}]$.

9. Find the H.C.F. of
$$x^4+2x^3y-3x^2y-8xy^2+6y^2$$
and
$$x^4-6x^3y+8x^2y^2-3xy^3+7xy^2-2y^3.$$

10. Find the L.C.D. of $x^2-2xy+y^2$, x^2-y^2, $x^2-5xy+6y^2$, and $x^2+5xy+6y^2$.

11. Find two quantities such that their sum is five guineas and five pence and their difference is five crowns and five pence.

Geometry.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—14 „ „ 3—8 „
„ 14—16 „ Junior Paper, Page 263.

1. Define a line, straight line, rectilineal figure, triangle, square, oblong, rhombus, rhomboid, regular polygon, diagonal.

2. Draw from a given point in a given straight line a straight line equal to that given straight line.

3. If two triangles have two sides of the one equal to two sides of the other, each to each, and the angles contained by those sides also equal, the two triangles are equal in every respect.

4. If at a point in a straight line two other straight lines upon the opposite sides of it make the adjacent angles together equal to two right angles, these two straight lines must be in one and the same straight line.

5. The greater side of every triangle is opposite to the greater angle.

6. If a perpendicular be drawn bisecting a given straight line, any point in this perpendicular is at equal distances from the extremities of the line.

7. If a side of a triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

8. A given angle BAC is bisected. If CA be produced to G and angle BAG bisected, the two bisecting lines are at right angles.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. Who was Tiglath-pileser? How did King Ahaz gain his help? What changes in the House of the Lord were carried out by Urijah under the direction of Ahaz?

2. In what way did the kingdom of Israel suffer great humiliation in the reign of Hoshea? What is meant by the word *conspiracy* as used in the account of his acts?

3. What events led to the captivity of the kingdom of Israel and the colonisation of Samaria? Give references to the Samaritans from the New Testament. What events alluded to in the books of Ezra and Nehemiah led to the bitter enmity between them and the Jews?

4. Senior Paper, No. 3.

(*b*)

5. Account for the custom of holding a kind of market in the outer court of the Temple, and the presence of the tables of the money changers.

6. Explain from the context the following passages:
(i) "The head of the corner."
(ii) "He is not the God of the dead but of the living."
(iii) "Thou art not far from the kingdom of God."
Explain also the peculiar use of the word *bush* in chap. xii.

7. How did Christ answer the inquiry, "By what authority doest thou these things?" Shew that there was a certain connexion between Christ's question and the question previously asked.

(*c*)

8. Comment on the following passages:
(i) "Having all sufficiency in all things."
(ii) "Thanks be unto God for his unspeakable gift."
(iii) "Your professed subjection unto the gospel."
(iv) "Though I be rude in speech."

9. Senior Paper, No. 7.

(*d*)

10. In what cases was water used for ceremonial purification before the time of John the Baptist? In what sense is baptism a means of grace?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (a), (b), (c), (d), (e).

(*a*)

1. Mention some of the solemn charges brought against the kingdom of Israel. What great events are alluded to in the words, "The Lord removed Israel out of his sight."

2. Give the account of the origin of the Samaritan people. What circumstances led to the establishment of some forms of worship of the true God among them, and how was this worship defective? (See Junior Paper, No. 3.)

3. How did Hezekiah begin his reign? What is the meaning of the word *Nehushtan*? Give the names of the kings of Assyria mentioned in this book, and state what their relations were to the history of the two kingdoms.

(*b*)

4. What is the precise meaning of the words *soul* and *exchange* in the passage, "What shall a man give in exchange for his soul"?

5. Give a list of some important events omitted in St. Mark's Gospel, but given by St. Luke and St. John, which followed the events recorded in chap. ix. and preceded those recorded in chap. x.

6. Give an account of the several attacks made upon Christ on what has been called "the day of questions," shewing the purpose of each party in the attack.

(*c*)

7. Shew how St. Paul's self-commendation was justified by the circumstances of his case, and quote passages to shew how it was blended with true humility, and what was the constraining motive which compelled him to take up this position.

(*d*)

8. Explain the following terms used in the Prayer Book: *eucharist, oblations, sponsor, homily, ordinary, canon.*

(*e*)

9. On what ground does Paley base his argument for a probable visit of St. Paul to Ephesus *after* his liberation at Rome?

10. State the points in the Second Epistle to Timothy which support the view that St. Paul underwent a *second* imprisonment at Rome.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS, LXXIII.—CVI. II. NEW TESTAMENT: ST. JOHN; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.; (*b*) HOOKER'S ECCLES. POL., PREFACE AND BOOK I.

I.

1. Give a short sketch of the life of Jeremiah, and the dates of the most important events which happened in Judæa during his lifetime.

2. Comment on the following:

(i) "Of the priests that were in Analhoth in the land of Benjamin."

(ii) "The backsliding Israel hath justified herself more than treacherous Judah."

(iii) "The children of Noph and Tahapanes."

(iv) "They have forsaken me, the fountain of living waters, and hewed them out cisterns, broken cisterns that can hold no water."

3. Enumerate the authors of the Psalms in Book III., assigning their psalms to each.

4. Explain and comment upon:

(i) "This mount Zion wherein thou hast dwelt."

(ii) "Thou breakest the heads of Leviathan in pieces, and gavest him to be meat to the people inhabiting the wilderness."

(iii) "The earth and all the inhabitants thereof are dissolved; I bear up the pillars of it."

(iv) "Promotion cometh neither from the east, nor from the west, nor from the south."

II.

5. Give a short account of the facts narrated in the New Testament of the life of St. John, and note the traditional accounts of his ministry. For what readers is this Gospel written? Give reasons for your answer.

6. What objects had St. Paul in writing his Epistles to the Galatians and Ephesians respectively? What are the probable dates of each?

7. Give the context and comment upon:

(i) "Why baptisest thou then, if thou be not that Christ, nor Elias, neither that prophet?"

(ii) "Can there any good thing come out of Nazareth?"

(iii) "Make not my Father's house a house of merchandise."

(iv) "There is another that beareth witness of me . . . . but I receive not testimony from man."

(v) "Immediately I conferred not with flesh and blood."

(vi) "Abraham believed God, and it was accounted to him for righteousness."

III. (*a*)

8. Discuss the nature of analogical evidence. What is it able to do, and what is it unable to do? Give some instances in it which amount to a real practical proof.

9. What does Butler consider to be the notion which religion assumes of the divine government of the world? Name those particular details which form the subject of Part II.

(*b*)

10. Quote Hooker's definition of law, and give a brief summary of the subject-matter of Book I.

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Give in tabular form, the name, date of accession, and relationship to predecessor of the sovereigns of England from William I. to Elizabeth.

2. Account for the disgrace of the Duke of Somerset, and for the Earl of Warwick being allowed to hold a position similar to the Duke's.

3. What circumstances obliged Somerset to declare war with France in 1549? By whom, and with what result, was it concluded?

4. What claim had Mary to the English throne? Name the most important events and measures of her reign.

5. Give the date, also a short account of the battle of St. Quentin and the loss of Calais.

6. Write an essay on the life, character, and times of Mary.

(*b*)

7. Describe the arrangements made for the government of the kingdom during the minority of Henry VI.? Were they systematically carried out, and was their result successful?

8. Senior Paper, No. 8.

9. Give in tabular form the dates, battles, and victors in the Wars of the Roses during the reign of Henry VI.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Give the names of, and countries in which are situated, the principal lakes of Europe, noting which form the source of a river, and through which a river flows.

2. Draw a map of Switzerland, in which put mountains, rivers, lakes, and six towns. Enumerate the Swiss cantons.

3. Describe fully the course of the Nile. Draw a map of its delta, shewing particularly the positions of the towns on and near it.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Why was the marriage of Mary with Philip II. of Spain displeasing to the nation? How was that displeasure manifested?

2. Indicate the difficulties in the position of Elizabeth during the reign of Mary. What was the excuse for her imprisonment?.

3. Junior Paper, No. 5.

4. Describe carefully the ecclesiastical policy of Mary, and discuss the probability of its having favored the reformation in England. Give a brief history of Ridley and Latimer.

5. Note the change in the character of the army which resulted from the decay of feudalism.

6. Give a short account of Sir Thomas More, Erasmus, and Roger Ascham.

(*b*)

7. Sketch the progress of the war in France during the reign of Henry VI., giving the dates of the chief events you mention.

8. Mention any circumstances previous to the reign of Henry VI. which foreshadowed the Wars of the Roses.

9. Junior Paper, No. 9.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Give the names and positions of six battle fields in England and six on the Continent, and give also the dates of the battles fought on them.

2. Indicate the chief sources of wealth to a country, and note which of them are found in England, Holland, Italy, Switzerland, and Cape Colony respectively?

3. Draw a map of Switzerland, in which put mountains, rivers, lakes, and six towns. Enumerate and give the positions of the chief passes of the Alps.

4. Junior Paper, No. 3.

English History.

Higher Local. Group A.

(*a*) GENERAL, 449—1066; (*b*) SPECIAL, INTRODUCTORY.

(*a*)

1. Shew, by map or otherwise, the position of the principal Anglo-Saxon kingdoms. State by which tribe each of these kingdoms was formed, and give the approximate date of foundation.

2. Trace the course of events by which these various kingdoms were merged in that of Wessex, noticing any previous attempts to unite the kingdoms of the Heptarchy under the supremacy of one of their number.

3. From what various sources was Christianity introduced into this island? Indicate roughly the sphere of each of these Christianising agencies.

4. Divide the history of the Danish invasions into periods. What do you consider the leading characteristics of each of these periods? Illustrate your answer by reference to facts.

5. Write a brief life of Theodore of Tarsus, Bede, and Dunstan.

6. Explain the meaning of the following terms: *Thegn, Ceorl, Witan, Hundred-moot, Wer-gild, Fyrd.*

(*b*)

7. Enumerate the possible claimants to the throne on the death of Elizabeth. Shew in each case the nature of the title.

8. What was the position of (i) the Roman Catholics, (ii) the Church of England, (iii) the Puritans in this country at the accession of James I.? Give some account of the Hampton Court Conference and Gunpowder Plot, shewing their connexion with James' policy with regard to these various religious bodies.

9. Compare the position of parliament under the Tudors with that under the Lancastrians. Mention any facts which shew the growth of a more independent spirit in the House of Commons during the reign of Elizabeth.

10. Give a brief sketch of the position of England in relation to foreign affairs at the accession of James I.

English Literature.

Junior.

KING RICHARD II.

1. Give the lines which succeed the following passages:

(i) "Which art a lion and a king of beasts."

(ii) "She came adorned hither like sweet May."

What was Hallowmas?

Give the modern name of the day.

2. Comment on the grammar of the following passages:

(i) "Good sometime queen prepare thee hence for France."

(ii) "Hie thee to France,
And cloister thee in some religious house."

(iii) "Which our profane hours here have stricken down."

(iv) "Where shrinking cold and sickness pines the clime."

3. Quote the passage describing Bolingbroke's triumphal entry into London. What does the reference to *painted imagery* probably mean?

4. In what figurative language does the queen seek to arouse the courage of Richard?

5. Paraphrase the Duke of York's description of Richard's entrance into London with Bolingbroke.

English Grammar.

1. Write out the present and past tenses of the subjunctive mood of the verbs *to be* and *to go*.

2. Correct or improve the following:

(i) Each of the girls danced in their turn.

(ii) Who do you wish to send?

(iii) I saw many rabbits sketching by the lake.

3. Give examples of three or four different kinds of subjects introduced into sentences.

4. Senior Paper, No. 3.

English Literature.

Senior.

KING RICHARD II.

1. Comment on the following passages:

(i) "To Julius Cæsar's ill-erected tower."

(ii) "Ah, thou the model where old Troy did stand,
Thou map of honour."

(iii) "To quit their grief
Tell thou the lamentable tale of me."

(iv) "O good! Convey? conveyors are you all."

(v) "Better far off than near, be ne'er the near."

(vi) "He shall be none."

2. How does *King Richard* illustrate the truth set forth in the following passage?

"The love of wicked friends converts to fear
That fear to hate."

3. Account for the use of the word "sympathise" without the addition of "with."

4. Give some account of Pontefract Castle. Under what name is it mentioned?

5. In what sense does Shakespeare use the following words and phrases: *cropp'd, appeach, amaz'd, interchangeably, order ta'en, misgoverned.*

Can you give instances of a similar use of these words from other plays?

English Grammar.

1. What parts of speech may each of the following words be? *arch, name, ring, watch, fire.* Write short sentences, introducing these words as different parts of speech.

2. What do you mean by an adjective and an adverbial sentence? Give examples of each.

3. Analyse and parse the words in italics:

"Then she *whose* heart still whispered, 'keep away,'
Was drawn by strong *desire unto* the place.
So towards the greenest glade she set her face,
Murmuring, 'Alas! and what a wretch am *I,*
That I *should fear* the *summer's greenery.*'"

English Language and Literature.

Higher Local.

(*a*) HENRY V.; (*b*) BACON'S ESSAYS, I.—XVIII.; (*c*) MILTON'S PARADISE LOST, I.—IV.; (*d*) HISTORY OF ENGLISH LITERATURE.

(*a*)

1. Paraphrase, *Henry V.*, Act I. Sc ii., from l. 9 to l. 20.

2. Why did the Archbishop of Canterbury support Henry's claim to the French throne? How did he explain the Salic Law?

3. Explain the following passages, and refer them to their context:

(i) "Or may we cram
Within this wooden O the very casques
That did affright the air at Agincourt?"

(ii) "And let us, ciphers to this great accompt,
On your imaginary forces work."

(iii) "Consideration, like an angel came,
And whipp'd the offending Adam out of him."

(iv) "Nor never Hydra-headed wilfulness
So soon did lose his seat and all at once
As in this king."

(v) "Turn him to any course of policy,
The Gordian knot of it he will unloose
Familiar as his garter."

(vi) "So that the art and practic part of life
Must be the mistress to this theoric."

(vii) "Whose hearts have left their bodies here in England,
And lie pavilioned in the fields of France."

(viii) "To find his title with some shows of truth."

4. Give the meaning of the following words as used in *Henry V.: scambling, question, lazars, companies, popularity, exhibiters, the severals, gloze, floods, imbar, crescive, proportions, fear'd assays, congreeing.*

5. Point out any grammatical peculiarity in the following:

(i) "King Lewis *his* satisfaction."

(ii) "The blood and courage that renowned them
Runs in your veins."

(iii) "Others, like soldiers, *armed in their stings*,
Make boot upon the summer's velvet buds."

(*b*)

1. Analyse Bacon's essay, *Of Truth.*

2. Comment on the following:

(i) "And therefore Death is no such terrible enemy when a man

hath so many attendants about him that can win the combat of him."

(ii) "They be two things,—unity and uniformity."

(iii) "All colours will agree in the dark."

(iv) "And so to consider men as Christians as we forget that they are men."

3. What instances does Bacon record of men who have met death with indifference?

4. Give the quotations from Lucretius, Seneca, Rabelais, St. Bernard, and St. Paul, that occur in Bacon's first three essays, and shew how he applies them.

5. What does Bacon consider are the fruits, and what ought to be the bounds, and what the means, of religious unity?

6. In what sense does Bacon use the words: *Blackes, preoccupate, band, propriety, politickes, zelants, modell, muniting.*

(*c*)

1. Explain the allusions in the following:

(i) "That shepherd who first taught the chosen seed,
In the beginning, how the heavens and earth
Rose out of Chaos."

(ii) "In bulk as huge
As whom the fables name of monstrous size,
Titanian or Earth-born that warr'd on Jove,
Briareos or Typhon, whom the den
By ancient Tarsus held."

(iii) "When with fierce winds Orion armed
Hath vexed the Red Sea coast, whose waves o'erthrew
Busiris and his Memphian chivalry,
While with perfidious hatred they pursued
The sojourners of Goshen."

(iv) "A multitude, like which the populous north
Pour'd never from her frozen loins, to pass
Rhene or the Danaw: when her barbarous sons
Came like a deluge on the South."

2. Paraphrase *Paradise Lost*, Book I., from l. 94, beginning, "Yet not for those," to l. 116, "this downfall."

(*d*)

1. Write a brief abstract of the history of English literature before the Norman Conquest.

2. Write an essay on "the influences which produced the great literary wealth of the later Elizabethan era."

English Language.

SWEET, ANGLO-SAXON READER, X.

1. How many cases have Anglo-Saxon nouns, adjectives, and pronouns respectively? Distinguish between the uses of the different cases.

2. What are the differences between the strong and weak declensions of nouns and of adjectives?

3. Decline *méce, hearpe, bócere, búa, bydel, deófol; hetol, faeger.*

4. Give the modern English forms of the words: *hám, méd, tíd, hróf, hús, búr;* and mention beside each of these other words in which the same change of sound has taken place.

5. Translate, explaining any difficulties of construction:

SWEET, *Anglo-Saxon Reader*, X, ll. 10—19, 35—49, 68—78, 132—139.

Parse *áefestan tungan*, l. 19; *sumre tíde*, l. 26; *fers* and *word*, l. 39; *eodorcende*, l. 75; *átuge*, l. 91; *drycced*, l. 100; *incan*, l. 118; *fraegn*, l. 126.

6. Translate, without a dictionary, with short notes on the words underlined:

Dá he óðerne ófstlice sceát
ðaet seó byrne tóbaerst; hé waes on breóstum wund
ðurh ðá hringlocan, him aet heortan stód
áetterne ord. Se eorl waes ðý blíðra:
hlóh ðá módig mann, sáede Metode ðanc
ðaes daegweorces, ðe him Dryhten forgeaf.

7. Translate into Anglo-Saxon:

(i) The brightness of the sun, and the light of the moon and of all stars are common to us all, rich and poor.

(ii) Bear the rods to the wood, and the stones to the sea-shore.

(iii) And the king was slain there, and also a hundred men of his army.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline the following, giving their gender and meaning: *virus, caedes, caro, pecten, ver, seges, crinis, cinis.*

2. What is meant by a cognate accusative, and with what kind of verbs is it used?

3. Write down the first person singular of the perfect active indicative and imperfect subjunctive of *refingo, refigo, meto, texo, tango, cogo, aperio.*

4. What cases are used in Latin to express time and place? Give examples.

5. Translate, with short marginal notes, elucidating (i) difficulties of construction, (ii) allusions:

VIRGIL, *Aeneid,* II. 486—505.

CAESAR, *de Bell. Gall.* III. c. 18.

6. Give a short account, with dates where necessary, of the life of Caesar.

7. Translate into Latin:

(i) He has left his country, for which it had been glorious to die.

(ii) Those whom fear had driven within the rampart were all slain.

(iii) For whatsoever proceeds from wisdom, that is to be sought after.

(iv) With you neither the authority of the Senate, nor my age, nor the worth and nobility of the general are of avail.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline in singular and plural: *alta palus, mulier petulans, gnavus tibicen, sollers artifex.*

2. Give the comparative and superlative of *providus, niger gracilis, malus, nequam, maledicus.*

3. Give the principal parts of *spondeo, suadeo, gaudeo, carpo, cado, caedo, vello, sino.*

4. When do *si* and *cum* take the indicative and when the subjunctive mood?

5. Translate, with short marginal notes, explaining carefully (i) difficult constructions, (ii) allusions:

VIRGIL, *Aeneid*, II. 486—505.

LIVY, XXI. c. 47.

6. Translate (if possible without a dictionary):

(i) The Roman State has increased by daring and action, not by slow counsels, which the timid call cautions.

(ii) There is by no means so much protection in foreign aid as there is danger from domestic treachery.

(iii) It is of very great consequence at what time this letter has been given you.

(iv) Tityre, tu patulae recubans sub tegmine fagi
Silvestrem tenui Musam meditaris avena;
Nos patriae fines, et dulcia linquimus arva;
Nos patriam fugimus: tu Tityre, lentes in umbra,
Formosam resonare doces Amaryllida silvas.

7. Give a short account, with dates, of the life of Virgil.

Latin.

Higher Local.

HORACE, ODES, III.; LIVY, VI.

1. Decline the following: *nemo, nihil, vis, vesper, jugerum, quisquam.*

2. Classify the uses of the Latin ablative under general heads with one example of each.

3. Distinguish carefully the employment in interrogative sentences of the particles *an, ne, utrum, num, nonne.*

How is (i) an affirmative and (ii) a negative answer conveyed by Latin particles?

4. Translate, with brief grammatical notes:

(i) Haec praescripta servantem licet magnifice vivere.
(ii) Solvendo non erat magius.
(iii) Germanicus Aegyptus proficiscitur cognoscendae antiquitatis.

5. Translate (without a dictionary):

Felix qui potuit rerum cognoscere causas,
Atque metus omnes et inexorabile fatum
Subjecit pedibus, strepitumque Acherontis avari
Fortunatus et ille. Deos qui novit agrestes,
Panaque. Silvanumque senem, Nymphasque sorores,
Illum non populi fasces, non purpura regum
Flexit, et infidos agitans discordia fratres;
Aut conjurato descendens Dacus ab Istro;
Non res Romanae, perituraque regna; neque ille,
Aut doluit miserans inopem, aut invidit habenti.
Quos rami fructus, quos ipsa volentia rura
Sponte tulere sua, carpsit; nec ferrea jura
Insanumque forum, aut populi tabularia vidit.

6. Translate into Latin prose:

We hold these truths to be self-evident: That all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness; that to secure these rights governments are instituted among men deriving their just powers from the consent of the governed; that whenever any form of government becomes destructive of these ends it is the right of the people to alter or to abolish it.

7. Translate, with marginal notes:

HORACE, *Odes*, III. 1, 17—48.
LIVY, Bk. VI. c. 3.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully the following: *ὕδωρ, πούς, πατρίς, ὄρνις, γένος, κέρας.*

2. In what points does the usage of the Greek article differ from ours?

3. Give the future indicative and aorist passive of *ἐλαύνω, δάκνω, αἱρέω, ἐσθίω, φέρω, ὄρνυμι.*

4. Parse the following: *ἧκα, εἶσι, ἴσθι, εὐγενεῖ, νεῷ, εἰδώς.*

5. Translate with short marginal notes, explaining carefully (i) difficult constructions, (ii) allusions:

XENOPHON, *Anabasis*, IV. c. vi. §§ 10—16.

EURIPIDES, *Heracleidae*, 607—629.

6. Give a short account, with dates where necessary, of the life and writings of Xenophon.

7. Translate into Greek:

(i) I will buy the horse that I may use him.

(ii) I went away that I might not see him.

(iii) I say that this probably could not happen.

(iv) I am afraid lest we should forget the way home.

8. Translate:

(i) *οὐδεὶς δὲ λύχνον ἅψας καλύπτει αὐτὸν σκεύει, ἢ ὑποκάτω κλίνης τίθησιν· ἀλλ' ἐπὶ λυχνίας ἐπιτίθησιν, ἵνα οἱ εἰσπορευόμενοι βλέπωσι τὸ φῶς. οὐ γάρ ἐστι κρυπτὸν, ὃ οὐ φανερὸν γενήσεται· οὐδὲ ἀπόκρυφον, ὃ οὐ γνωσθήσεται καὶ εἰς φανερὸν ἔλθῃ.*

(ii) *οἱ γὰρ κατὰ σάρκα ὄντες, τὰ τῆς σαρκὸς φρονοῦσιν. οἱ δὲ κατὰ πνεῦμα τὰ τοῦ πνεύματος. τὸ γὰρ φρόνημα τῆς σαρκὸς, θάνατος· τὸ δὲ φρόνημα τοῦ πνεύματος, ζωὴ καὶ εἰρήνη.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate into Greek, and decline the following: *a fine horse, the present time, the whole city, nightingale, weight, hope.*

2. Give the rules for Greek conditional sentences, with examples.

3. Give the aorist and perfect active indicative of *βαίνω, φθίνω, ἁμαρτάνω, ὀφλισκάνω, γηράσκω, τιτρώσκω, μένω, ἐσθίω.*

4. Explain the construction of *πρὶν* and *πρὶν ἂν.*

5. What do you know of Gorgias, Prodicus, Anaxagoras, Euripides?

6. Translate, with short marginal notes:

PLATO, *Apology*, c. XXVI.

EURIPIDES, *Heracleidae*, 607—629.

7. Translate (if possible without a dictionary):

(i) As the whole State in the dangers of war is committed to the care of the general, it is natural both that great good should happen when he is successful and great evil when he fails.

(ii) You must choose what is best rather than what is agreeable when both together are not allowed.

(iii) Should anyone possess wealth and not make use of it would he be happy?

8. Translate:

(i) *οὐδεὶς δὲ λύχνον ἅψας καλύπτει αὐτὸν σκεύει, ἢ ὑποκάτω κλίνης τίθησιν· ἀλλ' ἐπὶ λυχνίας ἐπιτίθησιν, ἵνα οἱ εἰσπορευόμενοι βλέπωσι τὸ φῶς. οὐ γάρ ἐστι κρυπτὸν ὃ οὐ φανερὸν γενήσεται· οὐδὲ ἀπόκρυφον ὃ οὐ γνωσθήσεται, καὶ εἰς φανερὸν ἔλθῃ.*

(ii) *οἱ γὰρ κατὰ σάρκα ὄντες, τὰ τῆς σαρκὸς φρονοῦσιν, οἱ δὲ κατὰ πνεῦμα τὰ τοῦ πνεύματος. τὸ γὰρ φρόνημα τῆς σαρκὸς, θάνατος· τὸ δὲ φρόνημα τοῦ πνεύματος ζωὴ καὶ εἰρήνη.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, OEDIPUS COLONEUS.

1. Parse the following: *στῆθι, ἔθεσαν, ἴσθι, εἶσαν, πεύσομαι, ἐνήνοχα, ἔδον, εἴληφα.*

2. Explain and classify the uses of the genitive case in Greek, giving instances.

3. Comment on the grammar of the following:

(i) *ἐπειδὴ τὰ σημεῖα ἐκατήροις ἤρθη.*

(ii) *οἱ μεν Βοιωτοὶ καὶ Κορίνθιοι ταῦτα ἐπεσταλμένοι.*

(iii) *φαιδρὰ γοῦν ἀπ' ὀμμάτων σαίνει με.*

(iv) *τὰ ἀρχεῖα συνετοὶ ἄγαν ὄντες.*

4. Translate:

THUCYDIDES, IV. c. 4, 5.

SOPHOCLES, *Oedipus Coloneus*, 84—100.

5. Translate (without a dictionary):

ἀπόλογον δὲ ἐρῶ Ἡρὸς τοῦ Ἀρμενίου τὸ γένος Παμφύλου— σφᾶς οὖν ἐπειδὴ ἀφικέσθαι, εὐθὺς δεῖν ἰέναι πρὸς τὴν Λάχεσιν. προφήτην οὖν τινὰ σφᾶς πρῶτον μὲν ἐν τάξει διαστῆσαι, ἔπειτα λαβόντα ἐκ τῶν τῆς Λαχέσεως γόνατων κλήρους τε καὶ βίων παραδείγματα, ἀναβάντα ἐπί τι βῆμα ὑψηλὸν εἰπεῖν· Ἀνάγκης θυγατρὸς κόρης Λαχέσεως λόγος. ψυχαὶ ἐφήμεροι ἀρχὴ ἄλλης περιόδου θνητοῦ γένους θανατηφόρου. οὐχ ὑμᾶς δαίμων λήξεται, ἀλλ' ὑμεῖς δαίμονα αἱρήσεσθε. πρῶτος δ' ὁ λαχὼν πρῶτος αἱρείσθω βίον, ᾧ συνέσται ἐξ ἀνάγκης. ἀρετὴ δὲ ἀδέσποτον ἣν τιμῶν καὶ ἀτιμάζων πλέον καὶ ἔλαττον αὐτῆς ἕκαστος ἕξει. αἰτία ἑλομένου θεὸς ἀναίτιος. ταῦτα εἰπόντα ῥῖψαι ἐπὶ πάντας τοὺς κλήρους, τὸν δὲ παρ' αὐτὸν πεσόντα ἕκαστον ἀναιρεῖσθαι, πλὴν οὗ· ἕ δὲ οὐκ ἐᾶν. τῷ δὲ ἀνελομένῳ δῆλον εἶναι ὁπόστος εἰλήχειν.

6. Translate into Greek prose:

Suffice it here to observe that his boast is, that throughout his political career he had kept one object steadily in view: to strengthen Athens within and without, and to preserve her independence, particularly against the power and the arts of Philip. He owned that he had failed, but it was after he had done all that one man in his situation—a citizen of a commonwealth—could do. He had failed in a cause in which defeat was more glorious than victory in any other, in a struggle not less worthy of Athens than those in which her heroic citizens in past ages had earned their fame.

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate: *Le Directoire*, p. 8, l. 29 to p. 9, l. 30; also p. 54, ll. 12 to 27.

Give a short account of the Vendean insurrection.

2. "The feminine of adjectives is formed by adding *e* mute to the masculine." State the chief exceptions to this rule, giving examples in each case.

3. Give in full the primitive tenses of *acquérir, mourir, venir, pourvoir, naître, bouillir.*

4. Translate into English:

(i) Vous m'avez *cassé* le poignet.

(ii) Je les ai *vus tout* couverts de sang.

(iii) Sa petite sœur vient de *partir.* Je *lui* aurais donné mon canif.

Parse the words in italics.

5. What is the place of the personal pronouns in French? Make sentences so as to shew every possible case.

6. Translate into English:

Il y avait là, parmi une multitude de choses précieuses de toute espèce, un magnifique vase d'or, orné de ciselures, que Clovis trouva si beau, qu'il demanda au soldat qui l'avait enlevé dans une église, de le lui abandonner pour sa part du butin.

7. Give the meaning in English, and write down the plurals of the following words: *landau, bail, joujou, œil, chacal, ail, aloyau.*

8. Translate into French:

We have just given them some stale bread. I will not receive him in my house. My brother has given me back a book of mine which he has had for some months. We have to learn our lessons every morning.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Give the feminine of *boiteux, roux, sujet, profès, mou, menteur.* Distinguish between *vendeuse* and *venderesse, devineuse* and *devineresse.*

2. Give, with examples, the rules for the formation of the plural in compound nouns.

3. Junior Paper, No. 1.

4. Give the first person singular and plural present subjunctive of *rire, savoir, plaire, tenir, vaincre;* the preterite of *cueillir, devoir, s'asseoir;* the third person plural subjunctive imperfect of *coudre, prendre, valoir.*

5. Translate: *Le Misanthrope,* Act II. Sc. i., "*Alceste.*—Non, ce n'est pas," to "su trouver le secret."

(i) Write short notes on the words *cohue, canons, rhingrave, fleurette.*

(ii) *Qu'attirent vos yeux.* When is this inversion used? Explain the construction of *vous êtes-vous rendue.*

6. Give examples of nouns which are of two genders, according to the sense in which they are used.

7. Translate into English:

Schiller ne présente jamais les réflexions les plus profondes que revêtues de nobles images; il parle à l'homme comme la nature elle-même; car la nature est toute à la fois penseur et poéte. Pour peindre l'idée du temps, elle fait passer devant nous les flots d'un fleuve inépuisable, et pour que sa jeunesse éternelle nous fasse songer à notre existence passagère, elle se revêt de fleurs qui doivent périr, elle fait tomber en automne les feuilles des arbres que le printemps a vues dans tout leur éclat; la poésie doit être le miroir terrestre de la Divinité, et réfléchir par les couleurs, les sons, et les rhythmes, toutes les beautés de l'univers.

8. Translate into French:

There was sent in her stead a goddess of a quite different figure; her motions were steady and composed, and her aspect serious but cheerful. She every now and then cast her eyes towards heaven and fixed them upon Jupiter; her name was Patience. She had no sooner placed herself by the Mount of Sorrows but, what I thought very remarkable, the whole heap sank to such a degree, that it did not appear a third part so big as it was before.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Trace the successive stages by which the literary Latin in France was supplanted by the popular Latin. Give examples of modern French words which are formed from the popular Latin, giving in each case the classical equivalent.

2. "French expresses the relation of words by their *position*, Latin by their *form*." How do you account for this difference?

3. Translate:

(i) Il est mort de sa belle mort.—Il lui faudra mettre de l'eau dans son vin.—Baisser pavillon.—Elle s'est coiffée de ma petite soeur.—Habillements confectionnés.

(ii) A stitch in time saves nine.—No road.—A return ticket.—Out of reach.—A groundless quarrel.—That is his trump card.

4. Translate into French:

Falsehood is so easy, truth so difficult.—The pencil is conscious of a delightful facility in drawing a griffin; the longer the claws, and the larger the wings, the better; but that marvellous facility which we mistook for genius is apt to forsake us when we want to draw a real unexaggerated lion.—Examine your words well, and you will find that even when you have no motive to be false it is a very hard thing to say the exact truth, even about your own immediate feelings.

5. "The great centres of intellectual life in France during the seventeenth century were the Hotel de Rambouillet, the Académie Française, and Port Royal." What do you know of each of these?

6. Give a brief account of the works of Pierre Corneille. Sketch the plot of *Le Cid*. Translate, Act II. Sc. ix. "*D. Diègue.* —Sire, ainsi ces cheveux blanchis" to "je mourra sans regret."

Give the preterite and present subjunctive of *se plaindre, servir, satisfaire, pouvoir, mourir*.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 63, "Und siehst" to "starres Eis."

Give the case of the following words, and say what each depends on? *Feuer, Herd, Rittersmann, Ritterpflicht, Unschuld, Erde, Saat, Eis.*

What is the subject to *siehst*?

2. What cases follow *bedürfen, vertrauen, gleichen, ermahnen*?

3. Decline with the article: *Herzog, Boden, Denkmal, Loos, Geschlecht.*

4. How are adjectives compared in German?

Compare *gross, hoch, alt, klein.*

Translate:

(i) He is richer than I am.

(ii) Which of these boys writes best?

(iii) This is the most beautiful rose I have ever seen.

(iv) The more the better.

5. Translate into English:

Diese Höhle war der Aufenthalt von Räubern.—Hier *verbargen* sie sich, um vor der strafenden Gerechtigheit sicher zu sein. Hier verwahrten sie in grossen schweren *Kästen* ihre geraubten Schätze—eine Menge *prächtiger* Kleider und *kostbare* Geräthe, Gold und Silber, Edelsteine und Perlen.

Parse the words in italics.

6. Translate into German:

Do you know the story of the three bears? I will tell it you. Once upon a time three bears lived together in a little house. The eldest was a very big bear, and the second was rather smaller, but the youngest was a very tiny little bear. One day when the three bears were out for a walk a little girl came to their house.

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 39, "Meine Arbeit," to p. 40, "zu Stande kommt."

Name any important events that occurred during the five campaigns here referred to.

Explain *Stoicismus, Jene Wiese die . mit Asphodelos bepflanzt ist. Ich will weder Sertorius noch Cato nachahmen.*

2. Where are the following words used? *derjenige, derselbe, dieser, jener, solcher, mancher.*

Write a sentence with each.

3. Translate: *Ernst, Herzog von Schwaben*, p. 67, "Da liegt er," to p. 68, "vom Felsen trotzt;" and p. 60, "Vermessner Sinn," to p. 61, "entsagt."

Explain *Hort, Verbands.*

Parse *vermessner, dünkt, stiefmütterlich.*

4. Translate into English:

Fern sei vom Kaiser die Tyrannenweise!
Den Willen nicht, die That nur will er strafen
Noch hat der Fürst sein Schicksal in der Hand.
Er lasse das Verbrechen unvollführt,
So wird man ihn still vom Commando nehmen,
Er wird dem Sohne seines Kaisers weichen.
Ein ehrenvoll Exil auf seine Schlösser
Wird Wohlthat mehr als Strafe für ihn sein.

SCHILLER, *Die Piccolomini.*

5. Translate into German:

This great, intrepid, and admirable man went down to his grave in peace and honour in the year 1799, leaving to his country and mankind a glorious heritage in a name unsullied by crime or rapacity, and an example to be held in everlasting remembrance by all future generations.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Name the chief German writers who were living in the year 1750, and enumerate the chief works of each.

2. Name any circumstances that account for the literary activity in Germany in the years 1750—1800.

3. Who were Gottsched and Bodmer? What influence had each on the literature of his time?

4. Translate:

Einige Kunstlehrer suchen das Erhabene in den Figuren und Metaphern; wo sie diese nicht sehen da wollen sie nichts hohes bemerken, wenn die Sache wovon geredet wird, gleich noch so bequem wäre, das Gemüthe zu erheben. Diese vermischen das Erhabene mit dem Starken und Nachdrücklichen. BODMER.

5. Give the rules for distinguishing separable from inseparable verbs.

6. What is the force in composition of *er, be, zer, ver, ent*?

7. Translate into German:

It is also to be noted that these two parties have never been the whole nation, nay, that they have never, taken together, made up a majority of the nation. Between them has always been a great mass, which has not steadfastly adhered to either, which has sometimes remained inertly neutral, and which has sometimes oscillated to and fro. MACAULAY.

8. Translate into English:

Was mich betraf, so suchte ich in Ausübung der Kunst keineswegs weiter. Seine Lehre wirkte auf unsern Geist und unsern Geschmack; aber seine eigne Zeichnung war zu unbestimmt, als das sie mich, der ich an den Gegenständen der Kunst und Natur auch nur hindämmerte, hätte zu einer strengen und entschiedenen Ausübring anleiten sollen. GOETHE.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Reduce £229 17*s.* 7¾*d.* to farthings, and 123 sq. yds. 7 ft. 123 in. to inches.

2. Take 86 mls. 918 yds. 2 ft. 11 in. from 100 mls. 900 yds. 1 ft. 5 in.

3. Multiply £3460 19*s.* 11¾*d.* by 156.

4. 43275576456 ÷ 87346.

5. Eight packages of cloth, each consisting of 4 parcels, each parcel of 10 pieces, and each piece of 26 yds., cost £66 5*s.* 6*d.*, what was the price per yard?

6. A rectangular field is 300 yds. long and 200 yds. broad, find the distance from corner to corner.

7. What is the expense of papering a room 4 yds. 6¾ in. long, 3 yds. 11¼ in. wide, and 3 yds. 1 ft. high, with paper half-a-yard wide at 3*d.* a yard?

8. Find the value of

$$\frac{5\frac{1}{2} \text{ of } \frac{3}{5} \text{ of } 2\frac{4}{7} - 1 \div (\frac{1}{6} + \frac{1}{2})}{1 - \frac{3}{14} \text{ of } \{\frac{1}{2} + \frac{1}{2} \text{ of } \frac{\frac{1}{20}}{\frac{1}{7} \text{ of } 1\frac{1}{20}}\}}.$$

9. How much stock must be sold out from the 4 per cents. at 96⅞ to raise a sufficient sum to discount a bill for £1000 due 52 days hence and discounted at 5½ per cent.?

10. What fraction is 4620 yards of a league, also 3 dys. 17 hrs. 36 min. of 28 days?

11. Two merchants, *A* and *B*, enter into partnership; *A* put in £5000, *B* £6500. At the expiration of a year another partner, *C*, was taken with a capital of £10,000. Four years and a half after *A* and *B*'s commencement the business is dissolved, profits £365,000. What are the shares of *A*, *B*, and *C* respectively?

12. Reduce 16·75 guineas to the decimal of 1·5 crowns, also ·3 of 10*s.* 6*d.* to the decimal of 8*s.* 4*d.*

13. The populations of three towns in 1841 were 20,325, 41,304, and 6117; in 1851 they had increased respectively 9, 10, and 12 per cent.; find the average population in 1851.

14. Multiply by duodecimals 7 ft. 5 in. 8 pts. by 9 ft. 4 in. 11 pts.

15. Extract the cube roots of 408518488, also of 586376253.

16. A vessel whose speed was $9\frac{1}{4}$ miles per hour, started at 8 o'clock to go 74 miles. A second whose speed was to that of the first as 8 to 5, starting from the same place, arrived 5 minutes before the first. When did the second vessel start?

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2. 133225, 72511713. 3. 60 lb. of tea. 4. 7*s.* 6*d.*
5. 7027 mls. 6 fur. 176 yds. 2 ft.; 18 cwt. 3 qrs. 16 lb. 15 oz.
6. £79 11*s.* 7*d.* 7. $11\frac{23}{44}$, $44\frac{23}{44}$, 27, $\frac{48}{121}$.
8. (i) $5\frac{1}{3}$; (ii) $4\frac{37}{73}$; (iii) $3\frac{1}{2}$; (iv) $\frac{13}{50}$. 9. $\frac{7}{12}$; $\frac{2241}{3248}$. 10. £150.
11. $2\frac{4}{15}$ hrs. 12. (i) 8929·9107; (ii) 3337·2714; (iii) ·18034; (iv) ·1528.
13. 600. 14. 153·67; 9·8002. 15. £96 9*s.* $10\frac{1}{2}d.$ 16. $7\frac{3}{5}$ mths.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Define a circle, semicircle, chord, segment, sector, rectilinear figure, regular polygon, parallel lines.

2. If at a point in a straight line two other straight lines upon opposite sides make the adjacent angles together equal to two right angles, these two straight lines are in one and the same straight line.

3. The greater angle of every triangle is subtended by the greater side.

4. $ABCD$ is a quadrilateral of which AD is the longest side and BC the shortest; shew that the angle ABC is greater than the angle ADC and the angle BCD greater than the angle BAD.

5. Draw through a given point a straight line parallel to a given straight line.

6. In every triangle the square on the side subtending an acute angle is less than the square on the sides containing that angle, by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle and the acute angle.

7. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

8. Describe a rectilineal figure which shall be similar to one given rectilineal figure and equal to another given rectilineal figure.

9. Distinguish between a problem and a theorem. Enumerate the parts of a proposition. Give examples of different methods of proof employed in Book I.

10. The straight lines bisecting the angles at the base of an isosceles triangle meet the sides at D and E; shew that DE is parallel to the base.

11. The squares of the diagonals of a parallelogram are together equal to the squares of the four sides.

12. If a side of a triangle be produced the exterior angle is equal to the two interior opposite angles; and the three interior angles of every triangle are together equal to two right angles.

After proving the above enunciate and prove three corollaries to it.

13. In any right-angled triangle the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

14. If a straight line be divided into any two parts, the rectangle contained by the whole and one of the parts is equal to the rectangle contained by the two parts, together with the square on the aforesaid part.

15. Find the centre of a circle.

16. If in a circle two straight lines cut one another which do not pass through the centre, they do not bisect one another.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—13 inclusive.
Higher Local work Nos. 8—17 inclusive.

1. Find the value of, when $a=1$, $b=2$, $c=5$, $d=4$, $e=6$, $f=0$,

(i) $\dfrac{a^c+b^d+e^f}{c^a+d^b+f^e}$.

(ii) $\sqrt{a+b+c}+e\sqrt[5]{f+b^2+d^2-e^2}$.

2. Multiply the sum of $x^4+2x^3y+4x^2y^2+2xy^3+y^4$ and $2x^2y^2-4x^3y-6xy^3$ by the difference between $x^2-4xy+y^2$ and $2y^2-6xy$, and divide the result by $x-y$.

3. Solve the equations:

(i) $\dfrac{x-1}{2}+\dfrac{x-3}{4}+\dfrac{x-4}{5}=\dfrac{6x-3}{10}$;

(ii) $x+y+z=8$, $x+2y+4z=23$, $xy+yz+xz=19$;

(iii) $\dfrac{x}{a}+\dfrac{y}{b}=\frac{1}{2}$, $\dfrac{a}{x}+\dfrac{b}{y}=8$.

4. The product of the difference of two numbers and the sum of their squares increased by their product is equal to the difference of their cubes.

5. Extract the square root of

$4x^2+4x^{\frac{1}{2}}y^{\frac{1}{2}}+xy^{-1}+8xy+8x^{\frac{1}{2}}y^{\frac{3}{2}}+4y^2+4y^{\frac{1}{2}}x^{-\frac{1}{2}}+yx^{-1}+1$.

6. Find a number whose square added to its cube is equal to nine times the square of the number increased by four.

7. Find the common difference of an A.P. when the first term is 5, the last term 21, and the sum is 65.

8. Solve the equations:

(i) $x+y=13$, $\dfrac{\sqrt{x}}{\sqrt{y}}+\dfrac{\sqrt{y}}{\sqrt{x}}=\frac{13}{6}$;

(ii) $x^3+y^3=91$, $x+y=7$;

(iii) $\dfrac{1}{x}+\dfrac{1}{y}-\dfrac{1}{z}=6$, $\dfrac{3}{y}+\dfrac{2}{z}=42$, $\dfrac{4}{x}-\dfrac{3}{y}=4$;

(iv) $\dfrac{bx}{y+b}-\dfrac{ay}{x+a}=b-a$, $\dfrac{3x}{b}+\dfrac{2y}{a}=5$.

9. The sum of two succeeding terms of a series in H.P. is 15 and their product is 54. Find the series.

10. There are 100 men to be seated at a long table half on each side, and 24 particular men desire to sit on one side of the table and 42 on the other side of the table. Find in how many ways the men can be seated at the table.

11. Find the condition in order that the three simultaneous equations $ax+by+cz=0$, $lx+my+nz=0$, $px+qy+rz=0$ may be all true.

12. Shew that the roots of the equation $x^2+px+q=0$ are $\frac{-p\pm\sqrt{p^2-4q}}{2}$. Hence find the relations between p and q in order that the roots may be (i) real, (ii) unreal, (iii) equal.

13. Find the rth term from the beginning, the middle term, and the rth term from the end of $\left(x^2-\frac{2}{x^3}\right)^8$.

14. Extract the square root of 324304 in the scale of 6, and of 2200021 in the scale of 5.

15. If α and β are the roots of the equation $x^2+3x-10=0$, form the equation whose roots are $(\alpha+\beta)^2$ and $(\alpha-\beta)^2$.

16. Find the number of words beginning and ending with a consonant that can be formed from the word *Cambridge*.

17. The difference between the difference of the squares of two numbers and the square of the difference is equal to twice the product of two numbers decreased by twice the square of the second number.

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2. $x^{\frac{1}{2}}+2y^{\frac{1}{2}}-3y^{-\frac{1}{2}}$, rem. $2x^{\frac{1}{2}}y^{-\frac{1}{2}}+4x^{\frac{1}{2}}y^{\frac{1}{2}}-2y^{-\frac{1}{2}}+2y^{-\frac{1}{2}}+6x^{\frac{1}{2}}$.

3. 4, 6, 8, 10. 5. 7 and 3.

6. (i) $x=\frac{5+\sqrt{365}}{2}$; (ii) $x=0, y=0, z=0$. 7. $\sqrt{24}-1$.

8. 12, 36, 108, 324. 9. Fivepence.

10. $\frac{n(n-1)(n-2)(n-3)(n-4)b^{n-5}(a+c+d)^5}{\lfloor 5}$ 12. 25 : 26.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Prove that in any triangle

$$\sin\frac{A}{2}\sin\frac{B}{2}=\frac{(s-c)\sqrt{(s-a)}\cdot\sqrt{(s-b)}}{c\sqrt{ab}},$$

where $s=\frac{a+b+c}{2}$.

2. Find $L\sin 55°\ 33'\ 24''$, having given

$$L\sin 55°\ 33'=9.9162530,$$
$$L\sin 55°\ 34'=9.9163409.$$

3. The length of a kite-string is 300 yards, and the angle of elevation is 45°. Find the height of the kite.

4. Prove that

$$\text{(i) } \cot 2A=\frac{\cot^2 A-1}{2\cot A};\quad \text{(ii) } \sin 2A=\frac{2\tan A}{1+\tan^2 A};$$
$$\text{(iii) } \tan A+\cot A=\frac{2}{\sin 2A}.$$

5. What is the value of $\cos(A+B+C)$ if $\cos A=\frac{4}{7}$, $\cos B=\frac{1}{9}$, $\cos C=\frac{9}{13}$, each angle being positive and less than a right angle?

6. Find the tangent of 285° and the sine of 855°.

7. Find the centre of gravity of four weights of 4 lb., 5 lb., 6 lb., and 7 lb. respectively placed at the angular points of a square.

8. A substance is weighed in a common balance having unequal arms, and in one scale it appears to weigh 9 lb. and in the other scale 16 lb. Find its true weight.

9. Two couples acting along the sides of a rhombus 5 feet long and 4 feet broad are in equilibrium. Find the ratio of the forces.

10. The entire weight of a balloon is 1 ton 19 cwt., and the weight of the air displaced by it is 5070 lb. Find the acceleration with which the balloon will begin to descend.

11. If the velocity of sound be 1120 feet per second, and the surface of the water in a well be 400 feet, find the time which must elapse after dropping a stone before hearing it strike the water.

12. A body falling freely is observed to describe 199 feet in a certain second. How long previously to this has it been falling? (Take $g=32$.)

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. Express in degrees, grades, and circular measure the angle of a regular hexagon and of a regular octagon.

2. Explain geometrically why, in determining $\sin\frac{A}{2}$ or $\cos\frac{A}{2}$ from $\cos A$, we get two, but from $\sin A$ four different values. Find a general expression for all angles which have a given sine.

3. A flag-staff stands on a tower and at a distance of 75 feet from the foot of the tower, the top of the flag-staff subtends an angle of 60°, and the top of the tower an angle of 30°. Find the length of the flag-staff.

4. Prove that in general the change of the sine of an angle is approximately proportional to the change of the angle itself.

5. Find log 1715 and log $\sqrt[3]{196}$, having given log 2 = ·30103, log 7 = ·845098.

6. If $A+B+C=90°$, find the least possible value that $\tan^2A+\tan^2B+\tan^2C$ can have.

7. The square of the ordinate of any point on a central conic with respect to any diameter is in a constant ratio to the rectangle contained by its abscissæ on that diameter.

8. Prove that a point will be within or without a conic according as the ratio of its focal distance to its perpendicular distance from the directrix is less or greater than the eccentricity of the conic.

9. Find the locus of the extremities of perpendiculars dropped from the focus on the tangent to a parabola.

10. Shew that the locus of a point whose distance from a given point is equal to its distance from a given straight line is a parabola.

11. If from a point O a pair of tangents OP, OP' be drawn to an ellipse, then OP and OP' will subtend equal angles at either focus.

12. If from any point R in one of the asymptotes to an hyperbola ordinates RPN, RDM be drawn to the hyperbola and its conjugate respectively, and PD be joined, then PD will be parallel to the other asymptote.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. Two weights of 5 and 7 ounces respectively balance on a straight lever without weight. The length of the shorter arm of the lever is 14 inches, find the length of the longer arm.

2. Find the magnitude and direction of the resultant of two unlike parallel forces acting on a rigid body.

3. Two weights of 5 lb. and 9 lb. respectively hang from the extremities of a lever 4 ft. long. Find the position of the fulcrum.

4. Investigate the relation between the power and the weight in the case of the inclined plane, taking into account the action of friction.

5. Shew that we may infer from the second law of motion that when any number of forces act simultaneously on a body, whether in rest or in motion, each produces the same change in the motion of the body as if it alone had acted on the body at rest.

6. If a lift be descending with an acceleration represented by $\frac{1}{12}g$, find the pressure which a man weighing 10 st. 4 lb. exerts upon the bottom of the cage.

7. How many cubic feet of water can be raised in 20 minutes from a well 520 feet deep by a steam-engine of 45 horse-power?

8. A body acted upon by a constant force moves from rest and describes 64 feet in the first 4 seconds of its motion. With what velocity will it be moving at the end of the ninth second?

9. A moving body is observed to increase its velocity by a velocity of 12 feet per second in every second. How far would it move from rest in 7 seconds?

10. Define a lunar, tropical, sidereal, anomalistic, nodical, and calendar month, and give the length of each.

11. Explain the motions of superior planets as seen from the earth, and draw a rough diagram shewing the apparent path described by Mars in the heavens.

12. What proof have we that the sun rotates on an axis? Describe any methods which have been adopted for determining the distance of the sun from the earth.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (a), (b), (c), (d). Senior Students will only be examined in (a), (b), and one of the subjects (c), (d), (e).

(*a*)

1. What reasons are there for regarding hydrogen as a metal?

2. Give the characteristics and chief compounds of *gold, silver,* and *platinum.*

3. What weight of silver can you obtain from 40 ounces of silver chloride?

(*b*)

4. By what tests would you distinguish between gold and copper?

5. Describe the method you would adopt for the preparation of sulphuretted hydrogen.

(*c*)

6. How may the centre of gravity be found experimentally? Find the centre of gravity of a triangle, square, and sphere.

7. Explain the terms *friction, tension, force, moment, gravity, equilibrium, resultant of forces.*

8. Describe the lever, and find the conditions of equilibrium when the lever is of any form, and the power and weight act in any given direction.

(*d*)

9. Account for the boiling point of liquids being different.

10. Mention any practical uses made of the forces of expansion and contraction under the influence of heat. Note any ill effects likely to result from the disregard of it.

11. Describe fully the construction of the barometer.

(*e*)

12. Explain the terms *magnetism, magnetic battery, positive electricity, conductor, insulator, electric current.*

13. Describe the construction and use of the Leyden jar.

14. How is the magnetic needle obtained? Account for its not always pointing north and south.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Give the composition, mode of growth, and chief modifications of the substance of the cell-wall.

2. What are crystalloids and chlorophyll-corpuscles? Give the usual structure and chief modifications of the latter.

3. What elements are necessary to the life of a plant? From what compounds may they be obtained?

4. What is the ordinary function of a root? Explain how this may be ascertained.

(*b*)

1. Name the class and order to which the common star-fish belongs, and describe the whole structure of the animal.

2. Describe the nervous system of a typical mollusc.

3. Name the chief divisions of the carnivora, and state their characteristics. Name three animals in each division, describe their habits, and state their geographical distribution. Mention any commercial products derived from animals in this order.

4. Name the classes of the vertebrata, and state their characteristics.

(*c*)

1. What is the cause of the variation in temperature (i) in the course of a year, (ii) in the course of twenty-four hours? Why do

we receive more heat from the sun when it is directly over our heads than when its rays fall obliquely?

2. Explain the causes of the uneven character of the land surface, stating to what agencies you attribute the formation of hills, valleys, and cliffs.

3. What is limestone, and how may it be formed? Mention three areas in England where it occurs.

4. In what parts of England are igneous rocks found? Which of them are the result of volcanic eruption?

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY. CHE-
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; PHY-
AND GEOLOGY.

No Student will be examined in more t least n three

1. Give the compositi chemical affinity tions of the substance of

2. What are cry e and compound bodies, and give usual structure an ifference between a mechanical mixture

3. What e und. what compo erms force, tension, weight, friction, centre of of a force, resultant of forces. Enumerate the

4. W es of matter. may h prove the parallelogram of forces. When a body rom a point round which it can swing freely, it will centre of gravity in the vertical line through the pension.

do you understand by a protein compound, and which ngredients of "Pasteur's Solution" is necessary for its ture by Torula? Describe the structure of torula and

Enumerate the physiological properties shewn by an *amoeba*, point out the resemblance and difference between it and a blood corpuscle. What proof can you give that an amoeba is an animal?

(*b*)

How is oxygen obtained from mercuric oxide and from chlorate of potash? How much of either must you use to obtain twenty gramme-measures of it?

...e a method for decomposing water into its con-

...ne? Give an account of its properties and

...tion of oxygen and of carbon di-oxide to

(c)

... machines, and shew the relation of

...nergy, and uniform and variable

...g with acceleration f over a space s.

...of s grammes possesses 19360 units of energy. Shew ... velocity is 88, and that if it have acquired this by moving ...ver 4 c its acceleration is 968.

4. What is meant by the coefficient of friction? Enunciate the laws of friction.

(d)

1. Give an account of the structure and life of one of the simplest plants.

2. Describe the structure, mode of growth, and reproduction of spirogyra.

3. Explain the mode of reproduction of Eurotium repens.

4. What is known of the structure of the common mushroom?

(e)

1. What is meant by a jelly fish? How far is the popular name correctly applied?

2. Describe the skeletal structures found among the actinozoa. Give them in a tabular form if you can.

3. Describe and compare the respiratory apparatus of a lobster or crayfish, and of any insect you know.

4. Name the characteristics of the monotremata, marsupialia, and edentata.

(*f*)

1. "Local death is going on at every moment, and in most if not all parts of the living body." Explain the meaning of this remark.

2. Describe the part which blood plays in animal economy, and enumerate its component parts.

3. Describe the phenomena of the coagulation of the blood and the causes which hasten or retard it. What are plasmine, fibrinogen, and fibrinoplastin?

4. Heat is said to be a sign of life. Is the production of heat in the animal body a vital or a physical process?

(*g*)

1. Give the general distribution of mountain ranges in the western hemisphere. To what cause do you attribute the upheaval of mountain chains?

2. Explain the terms *dip*, *strike*, and *fault*. What is meant by the expression that a fault "hades to the downthrow"?

3. In what parts of Great Britain are Cambrian and Silurian rocks found, and what forms of life are characteristic in these periods?

4. Give examples of sedimentary rocks. How are they formed and hardened?

Logic.

Higher Local.

1. Give what seems to you to be the best definition of logic, and compare it with any other generally received definitions of the term.

2. Point out the relation between grammar and logic. Analyse fully:

"Needs must the Power,
That made us and for us this ample world,
Be infinitely good, and of his good
As liberal and free as infinite,
That raised us from the dust and placed us here
In all this happiness, who at his hand
Have nothing merited, nor can perform
Aught whereof he hath need."

3. Define the following terms: *science, art, law of nature, law of thought, proposition, syllogism, premise,* and *conclusion.*

4. Logicians have been divided into three schools, Nominalists, Realists, and Conceptualists. Upon what difference in theory is this division founded?

5. What is Hobbes' definition of a name? Distinguish between categorematic and syncategorematic, general and collective, concrete and abstract, relative and absolute terms. To which of the above classes do the following terms belong? *company, gas, green, sensation, whiteness.*

6. From what causes does the ambiguity of terms arise? Give examples of ambiguous terms, and of fallacies arising from this ambiguity.

7. Explain the meaning of the law that "as the intension of a term is increased the extention is decreased," and discuss (quoting authorities) the question whether proper names are connotative or non-connotative.

8. Distinguish between *generalisation* and *specialisation.* Take six examples of terms, and shew by tracing their history how their meaning has become modified by one of these processes.

French History.

(*a*) General, 987—1100; (*b*) Special, 1643—1661.

(*a*)

1. Shew, by map or otherwise, the precise limits of Hugh Capet's dominions. Compare his position with that of the other great Frank lords, and discuss the probable reasons for his election.

2. What do you understand by the Truce of God? Trace its influence upon social life.

3. What was the effect upon France of the Norman Conquest of England?

4. Give in outline the story of the First Crusade. Discuss the good and evil effects of the Crusading movement upon national life and progress.

(*b*)

5. Sketch the character of Richelieu. What do you consider to have been the results of his administration?

6. Enumerate carefully all the points in the Peace of Westphalia which concerned France. What were the real advantages which accrued to France from that peace?

7. What were the causes which resulted in the War of the Fronde? Sketch the progress of events from 1648 to 1653, carefully distinguishing between the old and new Fronde. Account for the failure of the Fronde party.

8. "Mazarin had been successful in all his foreign policy." Sketch briefly the course of events from 1648 to 1661, so as to prove the truth of this statement.

Constitutional History.

Group H.

1. Account for the fact that English history shews us Germanic institutions in their purest form and most natural development.

2. Describe the Anglo-Saxon system of local government.

3. Trace the development of the royal power between the dates of the Anglo-Saxon and Norman Conquests.

4. Describe the nature and functions of the Witan.

5. Explain the following terms: *Wer-gild, Compurgation, Ordeal, Earldorman, thegn, ceorl, gesith, Trinoda necessitas.*

Political Economy.

Higher Local.

1. Give the most complete classification that you can of the different kinds of wealth, and place the following objects in their respective classes: corn, a piano, a useless machine, electricity, oysters, a musical voice, a slave, a bank-note, diamonds, a sewing machine.

2. (i) Point out the scope of political economy, and discuss the practical use of the science.

(ii) Criticise various definitions of political economy, and give a definition of your own.

(iii) What objections have been raised against the term *political economy.*

3. "Every year mental labour becomes more important, and manual labour less important." Prove this by reference to the changes which have taken place in England during the last half-century.

4. Enumerate, as fully as possible, the various reasons why England is such a wealthy country.

5. Give various definitions of capital, and your criticisms on them. Why is money the most useful form of capital?

6. Senior Paper, No. 1.

7. Senior Paper, No. 3.

8. Senior Paper, No. 4.

Political Economy.

Senior.

1. What is wealth? Quote various definitions of wealth, and criticise them.

2. "Productive labour cannot generally be divided off by a clearly defined line from unproductive." Prove this by many examples.

3. Enumerate briefly the various conditions on which depends the efficiency of man's labour in the production of wealth.

Mention some of the methods by which you consider the efficiency of labour in England at present could be improved.

4. Point out the kind of assistance which machinery renders to man's work. If the use of machinery was extensively introduced into a country, what do you consider would be the effect on the labour of that country? Distinguish carefully between *temporary* and *permanent* effects.

5. Explain the following terms: *science, a market, degradation of labour, implements, extractive industry, the agricultural stage, localisation of industry, taxes, money.*

6. Higher Local Paper, No. 1.

7. Higher Local Paper, No. 2 (iii).

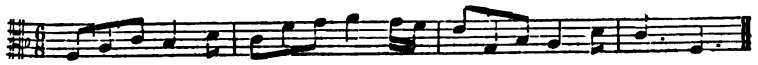
8. Higher Local Paper, No. 4.

Music.

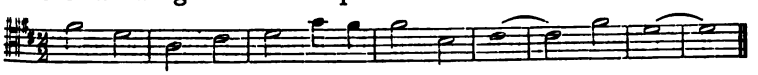
Junior and Senior.

Note.—*Seniors omit question 2 and Juniors omits questions 4 and 7. In all four-part exercises not written in score, the treble and alto parts are to be written on the treble stave and the tenor and bass parts on the bass stave.*

1. Write the following at the same pitch on the treble stave:



and the following at the same pitch on the bass stave:



2. How are common chords formed? How do major and minor common chords differ?

3. Are the following common chords? Give reasons for your answer.

4. From which of its notes does the common chord take its name? Does this note always appear in the same part? In what way does its position affect the nature of the chord?

5. Give the rules to be observed in part-writing which relate to

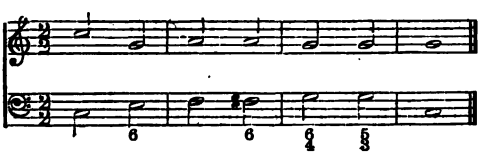
(i) Fifths and octaves;

(ii) The progression of the leading-note and as a rule to all notes accidentally raised;

(iii) A false relation;

(iv) The doubling of notes in writing common chords in four parts.

6. Write the common chord of E major and F minor with their inversions in four parts, and give the three positions of each chord.

7. Add alto and tenor parts to the following:

8. Of how many inversions is a common chord capable? Why can it not have more?

9. Give rules for the doubling of notes in writing the inversions of common chords in four parts.

Music.

Women.

1. Discuss in the form of a short essay the distinguishing characteristics of, and points of similarity and dissimilarity between, *harmony* and *counterpoint*; trace as far as possible their independent growth, and discuss their relative importance in modern music.

2. Define *scale*, and explain the following terms as applied to scales: *chromatic, diatonic, major and minor mode, tonic major, relative minor, pentatonic.* Give an example of each, and, in the case of the *minor mode*, an example and explanation of each form.

3. Define *interval*, and give an explanation and one example of each of the following kinds: *major, minor, augmented, diminished, doubly augmented, doubly diminished, chromatic, diatonic, complementary, concord, discord, inverted.*

4. State the harmonic rules which relate to:

(i) Fifths and octaves;

(ii) The treatment of the leading-note and accidentally raised notes generally;

(iii) The doubling of notes in four parts as far as relates to common chords and their inversions;

(iv) The use of the $\frac{6}{4}$;

(v) A false relation;

and the contrapuntal rules which relate to:

(i) The progression of sounds,

(ii) The combination of sounds,

(iii) The progression of intervals,

in two-part counterpoint of the first species.

Editorial.

The result of the June Higher Local Examination being now before us, we have the pleasure of congratulating the students of our Correspondence Class, on several having passed in the First Class with distinctions in English History, Literature, and the Essays on English Literature; others in the Second Class with one distinction in History. A few who only joined the Class at Christmas, and consequently had shorter time for preparation, have succeeded in satisfying the examiners. Several students having neglected to acquaint us with their index number, we are not able to give the exact percentage of students passing the First, Second, or Third Class, nor that of failures; of the latter, however, we only know of two, whom we may hope will do well another year, the more so as one of the two failed in one subject only.

The £5 5*s.* prize offered last year to the student who passed highest in Group A, provided First Class with distinction was gained, is awarded to No. 33. A similar prize is offered for next year with others, particulars of which may be seen on our covers.

We must draw the attention of Higher Local students to the alterations in the regulations for the examination in 1883, English History being removed from Group A to form with Constitutional and French History another Group, H.

No candidate can now obtain a certificate without satisfying the examiners in Elementary Arithmetic and three of the groups R, A, B, C, D, E, F, G, H, one of which must be B or C, the two others not being allowed to be R and F. For an Honour Certificate the same conditions apply, but a First or Second Class must be obtained in two groups.

For a First or Second Class the groups are:

R. Religious Knowledge, Part I. II. and *a*, *b*, or *c* of III. (see page 291).

A. English Literature, History of English Literature (298), Early English (300).

B. Two Languages, Latin, Greek, French, German (303), Italian.*

C. Arithmetic, Euclid, Algebra (313), and two of the remaining subjects (320).

D. Political Economy (331), Logic (329).

E. Science, Elementary I., and one Science (324).

F. Music (333).

H. English History (295), Constitutional History (331), French History (330).

It is requested that students joining the Class this month will let the Editor know as early as possible what subjects they wish to take, and will forward lists of the books they have on each subject (each list must be on a separate paper), as the examiners will be glad to send instructions on certain subjects as to the course taken in *The Cambridge Examiner*, and to recommend books it may be desirable to get.

Students offering the Greek of the New Testament in Group R are desired always to translate the passages given at the end of the Senior and Higher Local Greek papers.

Junior and Senior students are reminded that October 1st is the latest day on which Forms of Entry may be returned to the Local Secretaries.

* We are prepared to have papers on Italian when six candidates want to take it.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. What circumstances may have forced Hezekiah into submission to Sennacherib? What terms were made by the Assyrian king, and how were the demands satisfied?

2. What would be the chief difference in the composition of the two opposing armies? Explain the taunt in chap. xviii. 23.

3. Comment on and explain the following passages:

(i) "He shall hear a rumour."
(ii) "I have digged and drunk strange waters."
(iii) "Ye shall eat this year such things as grow of themselves."
(iv) "The staff of that bruised reed."
(v) "Lift up thy prayer for the remnant that are left."

(*b*)

4. How did Christ describe the Scribes in his warning against their influence.

5. Give illustrations from Scripture of the fulfilment of the words of Christ contained in the ninth and tenth verses of chap. xiii.

6. Explain the following allusions:

(i) "The abomination of desolation."
(ii) "Let him that is on the house top not go down into the house."
(iii) "She hath done what she could."

7. How was the Passover Feast celebrated among the Jews in the time of Christ?

(*c*)

8. State the reason given by St. Paul for his enumeration of his sufferings. In what different senses may the statement contained in chap. xi. 19 be taken?

(*d*)

9. "From thence he shall come to judge the quick and the dead." Under what images had Christ spoken of this event to his disciples?

10. What are the promises made on behalf of a child by its sponsors? What are the three baptismal vows?

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (a), (b), (c), (d), (e).

(*a*)

1. What do you consider to be the strongest points made by Rabshâkeh in his speech of defiance? Shew from his words that he mistook the character of Hezekiah's reformation.

2. By what kind of visitation may the destruction of Sennacherib's army have been effected?

3. Write in your own words the story of Hezekiah's sickness and recovery.

4. What is the meaning of the symbolic language used in chap. xxi. 13?

(*b*)

5. Can you trace any connexion between the properties of salt and fire? See chap. ix.

6. How was the hypocrisy of the Pharisees and Herodians revealed by their question about the tribute money? What was the tribute money? What insurrection did this exaction give rise to?

7. Distinguish between those prophecies in chap. xiii. which seem to refer especially to the destruction of Jerusalem, and those which were spoken more particularly in reference to the second advent of our Lord.

(*c*)

8. What is the meaning of the passage, "I seek not yours, but you"?

9. How may the words be interpreted, "Behold, the third time I am ready to come to you"?

(*d*)

10. Analyse the hymn "Gloria in Eccelsis" in the Post Communion office.

(*e*)

11. Trace the analogous expressions which occur in the Epistle to Titus and the first Epistle to Timothy.

12. What argument does Paley derive from the introduction to the two quotations from Greek poets contained in Acts xvii. 28, and Titus i. 12?

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS, LXXIII.—CVI. II. NEW TESTAMENT: ST. JOHN; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.; (*b*) PALEY'S HORÆ PAULINÆ, CHAPTERS 1—5.

I.

1. Sketch the general history of the Jewish people from the death of Josiah to the edict of Cyrus, giving special prominence to those events which led to the restoration of the Temple.

2. What changes in the national character of the Jews may be traced after the return from the seventy years' captivity? Illustrate your answer by quotations from the Psalms of Book III.

3. Explain the geographical allusions in Psalms lxxxix. 12; lxxvi. 2; lxxviii. 60; lxxxi. 7; lxxxiii. 6, 7, 10; lxxxvii. 4.

4. Give, with context, any quotations from the Psalms which occur in St. John's Gospel.

5. Point out clearly the lessons enforced by Psalm lxxxviii., and from it illustrate the relation between the national chronicles and the historical lyrics of the Jews.

6. What reference is made in these psalms to (i) the tabernacle, (ii) the temple,—its position, national importance, spiritual influence, its loss during the captivity, its destruction?

7. Write short explanatory notes on the following passages:

(i) "Who going through the valley of Baca make it a well."

(ii) "Blow up the trumpet in the new moon."

(iii) "O my God, make them like a wheel."

(iv) "Thou that dwellest between the cherubims, shine forth."

(v) "I have said, Ye are gods, and all of you are children of the most High."

8. What is known of the following persons? Asnapper, Evil-Merodach, Pashur, Hananiah, Tatnai, Jonadab, Ebed-Melech.

II.

9. Compare and contrast the leading features of the synoptical gospels with that written by St. John. In your answer give special prominence to those points of contrast which have presented difficulties to some minds.

10. It has been said that "the most structural of the gospels is that of St. John." Prove the truth of these words by an analysis in tabular form.

11. Shew that although the details of the Incarnation, the Baptism, the Last Supper, and the Ascension are not given in his Gospel, each event is distinctly intimated by St. John.

12. Give a table of the miracles recorded in this Gospel, arranging them in what appear to you to be the most significant groups.

13. Comment on and explain:

(i) "The zeal of thine house hath eaten me up."

(ii) "The Jews have no dealings with the Samaritans."

(iii) "This is a hard saying, who can hear it?"

(iv) "The Romans shall come and take away both our place and nation."

(v) "A country near to the wilderness, a city called Ephraim."

14. Give a sketch of the intercourse between St. Paul and the Galatian Church. Shew how the Epistle confirms the history of the Acts of the Apostles.

III. (*a*)

15. "The ultimate end designed in the constitution of Nature and conduct of Providence is the most virtue and happiness possible." Criticise and illustrate this statement.

16. Give the substance of Butler's answer to the presumption against a revelation considered as miraculous.

17. "It has been shewn that the objections to Christianity, as distinguished from objections against its evidence, are frivolous." Give a summary of the argument here referred to.

(*b*)

18. Illustrate, by original examples, cases in which coincidences are not proofs of authenticity.

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Give a short account of the origin and function of the Court of High Commission.

2. What acts at the beginning of Elizabeth's reign indicated the relations of England and France, and of Elizabeth and Mary?

3. Who were the Lords of the Congregation? Give a short account of Knox and Murray.

4. What circumstances led to the engagement at Carberry Hill? Sketch the life of Mary, Queen of Scots, from that time.

(*b*)

5. Shew, by a genealogical table, the descent of Edward IV. Mention any facts you may know of his career previous to his accession.

6. Senior Paper, No. 5.

7. Senior Paper, No. 8.

8. Account for Buckingham's desertion of Richard III. and for the choice of Henry, Duke of Richmond, as leader of the disaffected party.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Name the most important rivers and lakes of European Turkey and Greece.

2. Draw a map of Greece, in which put physical features, political divisions, and the following places: Athens, Marathon, Zeitoun, Argos, Sparta, Kastri, Corinth, Thiva, Thermopylæ.

3. Mention any incidents which give historic interest to any of the places named in Question 2.

4. Senior Paper, No. 4.

English History.

Senior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Give the circumstances which led to the peace of Câteau-Cambrésis, its date, and the countries concerned in it.

2. Trace as fully as possible the progress of the Reformation in England between 1558 and 1575. Note the introduction and use of the terms Puritan, Nonconformist, Dissenter.

3. Sketch the life of Mary, Queen of Scots, giving, with most detail, the particulars of the time spent in England, her connexion with the plots for her release, and her relations with Elizabeth.

4. Give a short account of Catherine de Medici and the Duke of Alva. Give the date and circumstances which led to the massacre of St. Bartholomew. Indicate the effects of the same.

(*b*)

5. Trace the history of the Wars of the Roses from 1461—85.

6. Junior Paper, No. 6.

7. What effect had the alliance of Edward IV. with Burgundy on (i) his position in England, (vi) his action on the landing of Warwick in 1470?

8. Shew the state of parties in England at the death of Edward IV., and indicate the means by which Richard obtained possession of the throne.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Describe as fully as possible the physical features of European Turkey and Greece, illustrating your description by a map.

2. Junior Paper, No. 2.

3. Junior Paper, No. 3.

4. Give as full an account as possible of the physical features, climate, and natural production of Africa between the Sahara and the river Congo. Name the maritime states within these limits, and state to whom they respectively belong, and their chief exports.

English History.

Higher Local. Group H.

(*a*) GENERAL, 1066—1135; (*b*) SPECIAL, 1605—1649.

(*a*)

1. Give an outline of the military history of the Norman Conquest.

That conquest has been called "a social, rather than a political revolution." Illustrate this statement.

2. On what grounds did William I. rest his title to the English throne?

3. Give an account of the various revolts against William I.

4. What was the policy of William I. with reference to (i) the Barons, (ii) the Church, (iii) the people? How far was this policy continued by his sons? Notice especially the Salisbury oath and the charter of Henry I.

5. Give a brief account of the various efforts of Robert to assert his claim on Normandy.

6. Write a history of the investiture dispute in England. What was the compromise finally agreed to?

(*b*)

7. To what expedients did James I. resort to obtain money? How far were they (i) novel, (ii) unconstitutional?

8. Give an account of the trial of Lord Bacon.

9. Trace the Protestant tendency of James' foreign policy between 1605—12. To whose influence may it be attributed?

10. Give an account of the foundation of the new England colonies. What earlier English settlements were there in North America?

11. Examine into the importance of foreign affairs during the period 1618—29, and their influence on the relations between James and his people.

12. Give an account of James' policy with regard to ecclesiastical affairs in Scotland. Notice especially the Articles of Perth.

English Literature.

Junior.

KING RICHARD II.

1. What is the meaning of the words in italics as used in the following passages:

(i) "The *chopping* French we do not understand."
(ii) "*Unto* my mother's prayers I bend my knee."
(iii) "This deadly blot in thy *digressing* son."
(iv) "He prays but faintly and *would* be denied."
(v) "Speak it in French, king, say *pardonnez moi.*"

How should the last word be pronounced?

2. Comment on the grammatical peculiarities of the following passages:

(i) "March on, and mark King Richard how he looks."
(ii) "Shall I so much dishonour my fair stars
On equal terms to give him chastisement?"
(iii) "That self mould."
(iv) "Raged more fierce."

3. "For now hath time made me his *numbering* clock."

Why is this adjective inserted? How does the king carry out this metaphor?

English Grammar.

1. Make nouns out of the following words: *swift, broad, obstinate, humble, careless, deep.*

2. What parts of speech must the subject and modifying words of a sentence be? Shew by examples the difference between simple and compound sentences.

3. What do you mean by *case*? What is the case of each noun and pronoun in the following passage?

"Into what *dangers* would *you* lead *me, Cassius,*
That *you* would have *me* seek into *myself*
For *that which* is not in *me*?"

English Literature.

Senior.

KING RICHARD II.

1. Comment on the following passages:

(i) "This festered joint cut off, the rest rests sound."

(ii) "Love loving not itself, none other can."

(iii) "What dost thou make here?"

Give instances of similar forms of expression used elsewhere by Shakespeare.

2. "Come, my old son, I pray Heaven make thee new."

Was this prayer ever in any sense fulfilled?

3. What is the meaning of the following words? *rapier, attainder, timeless, marry* (interjection), *forfend, seignories, ruth, kingly doom.*

4. What anachronism may be detected in Act V. Sc. iii.?

How much was a groat?

5. What is the context of the following passage?

"Thoughts tending to ambition they do plot
Unlikely wonders."

What admission of weakness is made by King Richard in this scene?

English Grammar.

1. How many parts of speech are essential to a language? Which of the eight parts has the least claim to the name?

2. Give instances of what is called the "deterioration" and the "elevation" of words.

3. Analyse:

"And *everybody* praised the Duke
Who this great fight *did win.*
But *what good* came of it at last?
Quoth little Peterkin.
Why *that* I cannot tell, said he,
But *'twas* a famous victory."

Parse the words in italics.

English Language and Literature.

Higher Local.

(*a*) HENRY V.; (*b*) BACON'S ESSAYS, I.—XXVIII.; (*c*) MILTON'S PARADISE LOST, I.—IV.; (*d*) HISTORY OF ENGLISH LITERATURE.

(*a*)

1. Paraphrase Henry V., Act I. Sc. ii., from l. 155 to l. 165. Explain the allusion to the king of Scots.

2. Explain the following passages:

(i) "Either our history shall with full mouth
Speak freely of our acts, or else our grave,
Like Turkish mute, shall have a tongueless mouth
Not worshipped with a waxen epitaph."

(ii) "When we have matched our rackets to these balls,
We will, in France, by God's grace, play a set
Shall strike his father's crown into the hazard."

(iii) "For once the eagle England being in prey."

(iv) "Yea, strike the Dauphin blind to look on us."

(v) "And bids you be advised there's nought in France
That can be with a nimble galliard won;
You cannot revel into dukedoms there."

(*b*)

3. What arguments does Bacon use against taking revenge?

4. Explain:

(i) "Publique revenges are, for the most part, fortunate, as that for the death of Cæsar, for the death of Pertinax, for the death of Henry the Third of France."

(ii) "It is true greatness to have in one, the frailty of a man and the security of a god."

(iii) "Vertue is like pretious odours, most fragrant when they are most incensed or crushed."

(iv) "And in this part, it is good, that a man's face give his tongue leave to speak."

5. Distinguish between secrecy, dissimulation, and simulation.

6. What does Bacon say are the advantages and what the disadvantages of simulation and dissimulation?

7. How does Bacon use the words *then, meane, ure, round*?

(*c*)

8. Give briefly the argument of *Paradise Lost*, Bk. I.

9. Enumerate, with short descriptive notes, the chief angels who answered Satan's summons to a conference.

10. Explain all allusions in the following passage:

"For never since created man
Met such imbodied force, as named with these
Could merit more than that small infantry
Warred on by cranes; though all the giant brood
Of Phlegra with th' heroic race were join'd
That fought at Thebes and Ilium, on each side
Mixt with auxiliar gods; and what resounds
In fable or romance of Uther's son,
Begirt with British and Armoric knights;
And all who since, baptised or infidel,
Jousted at Aspramont or Montalban,
Damasco, or Morocco, or Trebisond;
Or whom Biserta sent from Afric shore
When Charlemain with all his peerage fell
By Fontarabia."

11. Give instances of Milton's use of Latinisms.

12. Explain and derive the following words, and give examples of them as used by Milton: *mortal, adamantine, witness, study, abject, affront, grunsel, flown, orient, considerate, amerc't, scathed, bullion dross, cresset, recess, frequent.*

13. Comment on the following:

(i) "That he no less
At length from us may find, who overcomes
By force, hath overcome but half his foe."

(ii) "Let none admire
That riches grow in Hell; that soil may best
Deserve the precious bane."

(*d*)

14. Write an essay on "the effects of the Norman Conquest on the English language and literature."

15. Sketch briefly the subject of *Piers Plowman's Vision.*

16. Give an account of Wiclif's life and writings.

17. Write short notes on the following works: Spenser's *Shepherd's Calendar,* Lyly's *Euphues,* Sidney's *Defence of Poetrie,* and the *Arcadia.*

18. Explain the general plot of Spenser's *Faëry Queene,* and write an analysis of either the first or second book of that poem.

English Language.

SWEET, ANGLO-SAXON READER, VI. VII. XXII.

1. Decline *medu, searu, wucu, duru, háetu, mús, cú, cealf, feóh.*

2. How many genders are there in Anglo-Saxon? What is meant by grammatical gender? Of what genders respectively are words ending in *a, end, ung, hád, dóm, scipe, nis, ing*?

3. Give the feminine nouns corresponding to *wer, cyning, god, hláford, faeder, fox, sangere, sunu.* Shew in which of these the feminine is formed from the masculine, and in which from a separate root.

4. How many strong adjective declensions are there? Can all adjectives take either the strong or the weak inflexion?

5. Translate, explaining all difficulties of construction:

SWEET, *Anglo-Saxon Reader*, VI., ll. 9—19, 23—29, 36—41; VII., ll. 14—30; XXII., ll. 1—6, 28—32, 41—49, 60—70.

Parse *niht*, VI., l. 2; *alne*, l. 10; *ofslaegenra*, l. 18; *niéhst*, VII., l. 12; *his gefaegene*, l. 17: *Godrum*, l. 26; *gefrugnen*, XXII., l. 1; *meahtum*, l. 10; *ús gefreogum*, l. 29; *hreóra*, l. 45; *geondláce*, l. 70.

6. What is the metre of the *Happy Land*? Explain its chief characteristics, and scan and criticise ll. 33—46.

7. Translate into Anglo-Saxon:

Gregory then beheld the beauty of the boys, and enquired from what country they were brought and he was told that they were from England. Again he asked what was the name of the people from whom they came. He was answered that they were named Angles. Then said he: Rightly are they called Angles, because they have the beauty of angels, and for such it is befitting that they be the companions of angels in heaven.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline fully, giving gender and meaning: *supellex, nubes, dies, pondus, tumultus, faber.*

2. What do you understand by ablative absolute?

3. Give the principal parts of the following verbs: *relinquo, polliceor, projicio, carpo, intelligo, queror, jubeo.*

4. What cases do the following prepositions govern? *super, sub, penes, sine, clam.* Give examples.

5. Translate, with short marginal notes:

VIRGIL, *Aeneid*, II. 671—694.

CAESAR, *de Bell. Gall.* III. c. 24.

6. What do you know of P. Crassus, Q. Sertorius, and Viridorix?

7. Translate into Latin:

(i) He took away secretly by night the very beautiful and very ancient statues.

(ii) True friendship seems to me to be richer and more splendid.

(iii) I know not whether this one is more dangerous as a rival than that one as a foe.

(iv) He has left his country, for which it is glorious to die.

(v) We hate what others seek.

(vi) I proceeded to what you and I had said about my sister.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline fully, and give the meaning of, *praeconibus, strepitu, senex, vis, fulgur, flos, tanta contumelia.*

2. Give the future simple and perfect subjunctive active of *crepo, serpo, censeo, suadeo, plecto, struo, scindo.*

3. Translate into as many ways as you can:

They sent the chief men of the State to offer submission to Cæsar.

4. What is the distinction between *alter* and *alius.*

Translate carefully: Oppida alia aliis modis capta sunt.—Oppida aliud alio modo capta sunt.

5. Translate, with short marginal notes:

VIRGIL, *Aeneid,* II. 671—694.

LIVY, XXI. c. 45.

6. State what you know of Hannibal and the two Scipios.

7. Translate (if possible without a dictionary):

(i) I wish that you had either never formed an alliance with C. Cæsar or had never broken it. The one course had become your dignity, the other your wisdom.

(ii) I have translated all these men's speeches, using all their ideas, and the turn of their ideas, and their arrangement of the matter, copying their words only as far as possible without their being at variance with our idiom.

(iii) Information of that fact having been given, and the gates having been closed by order of the proconsul, all the guilty parties were seized, and after the torture had been sharply applied, were condemned and put to death.

(iv) Altero die, cum ad oppidum Senonem Vellaunodunum venisset nequem post se hostem relinqueret quo expitiore refrumentaria uteretur, oppugnare instituit, idque biduo circumvallavit; tertio die missis ex oppido legatis de deditione, arma conferre jumenta produci sexcentos obsides dari jubet.

Latin.

Higher Local.

LIVY, VI.; HORACE, ODES, III.

1. Decline the following, giving their gender and meaning: *turtur, lepus, delphin, acus, verres, deus, nix, nox, nux.*

2. Collect one or two instances of the idiomatic use of each of the following adversative conjunctions: *at, autem, atque, ceterum, quod, tamen, vero.*

3. Distinguish carefully the use and meaning of *aliquis, quis* (indef.), *quispiam, quisquam, ullus, quivis, quidem.*

4. Classify the uses of *quamvis, pro.*

5. Translate, with marginal notes:

LIVY, VI. c. 7.

HORACE, *Odes*, Bks. III, 4, 40—80.

6. In what metre are the first six odes written? Scan Ode II. 37—40.

7. Translate (without a dictionary):

Diffugere nives; redeunt jam gramina campis,
Arboribusque comae;
Mutat terra vices; et decrescentia ripas
Flumina praetereunt;
Gratia cum Nymphis geminisque Sororibus audet
Ducere nuda choros.
Immortalia ne speres, monet Annus, et almum
Quae rapit Hora diem
Frigora mitescunt Zephyris: Ver proterit Aestas,
Interitura, simul
Pomifer Auctumnus fruges effuderit; et mox
Bruma recurrit iners.

8. Translate:

We never disagreed on the division of any property unless indeed the State and its honours may be considered as such; and although as regards Cæsar our fortune drew us different ways latterly, you will remember my anxiety to procure for you the consulate and the triumph. Our political views have always been similar. You, indeed, were somewhat more aristocratic and senatorial, and this prejudice has ruined us both.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully, giving gender and meaning: *βασιλεύς, κάλλος, μέλι, ποιμήν, φόρμιγξ, πόνος.*

2. Decline the following: *ἵλεως, ἡδυς, μέλας, χαρίεις, εὐδαίμων.*

3. Give the future simple active and imperfect passive of *αὐξάνω, αἰσθάνομαι, λαγχάνω, μιμνήσκω, μάχομαι, νέμω.*

4. Parse the following: *ἀπόδος, ἔγημα, ἐδέησα, δραμοῦμαι, πέφηνα.*

5. Translate, with careful marginal notes:

XENOPHON, *Anabasis*, IV. c. vii. §§ 8—15.

EURIPIDES, *Heracleidae*, 574—596.

6. Translate the following:

(i) I will ask how great the forces of the enemy are.

(ii) No one is so brave but that he sometimes feels fear.

(iii) These things are very difficult to be done.

(iv) It is doubtful whether these things are true.

7. Translate:

(i) *καὶ ὑμεῖς ὅμοιοι ἀνθρώποις προσδεχομένοις τὸν κύριον ἑαυτῶν, πότε ἀναλύσει ἐκ τῶν γάμων, ἵνα, ἐλθόντος καὶ κρούσαντος, εὐθέως ἀνοίξωσιν αὐτῷ. μακάριοι οἱ δοῦλοι ἐκεῖνοι οὓς ἐλθὼν ὁ κύριος εὑρήσει γρηγοροῦντας. ἀμὴν λέγω ὑμῖν, ὅτι περιζώσεται καὶ ἀνακλινεῖ αὐτοὺς, καὶ παρελθὼν διακονήσει αὐτοῖς.*

(ii) *ἐν ἀγάπῃ ἐῤῥιζωμένοι καὶ τεθεμελιωμένοι ἵνα ἐξισχύσητε καταλαβέσθαι σὺν πᾶσι τοῖς ἁγίοις, τί τὸ πλάτος καὶ μῆκος καὶ βάθος καὶ ὕψος, γνῶναί τε τὴν ὑπερβάλλουσαν τῆς γνώσεως ἀγάπην τοῦ Χριστοῦ, ἵνα πληρωθῆτε εἰς πᾶν τὸ πλήρωμα τοῦ θεοῦ.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate, decline, and give the gender and meaning of the following: *μάρτυς, χάλυψ, θήρ, κλείς, δόρυ, φρέαρ, λαγώς, μέλι.*

2. What cases do the following prepositions govern? *διὰ, κατὰ, ἀνὰ, ἀμφί, παρὰ.* Give examples.

3. Give the principal parts of the following: *μίγνυμι, φθίνω, τυγχάνω, ἱκνοῦμαι, ὠθέω, βούλομαι.*

4. Translate (if possible without a dictionary):

(i) Though it was often easy for you to gain more you were unwilling.

(ii) In Draco's laws death had been appointed for all criminals as the only punishment.

(iii) The Athenians reproached Pericles because, being a general, he did not lead them out against the enemy.

5. Translate, with short marginal notes:

PLATO, *Apology*, c. 27.

EURIPIDES, *Heracleidae*, 574—596.

6. Give a sketch of the plot of the *Heracleidae*. What epithet is applied to Euripides, and for what reason?

7. Translate:

(i) *καὶ ὑμεῖς ὅμοιοι ἀνθρώποις προσδεχομένοις τὸν κύριον ἑαυτῶν, πότε ἀναλύσει ἐκ τῶν γάμων, ἵνα, ἐλθόντος καὶ κρούσαντος, εὐθέως ἀνοίξωσιν αὐτῷ. μακάριοι οἱ δοῦλοι ἐκεῖνοι οὓς ἐλθὼν ὁ κύριος εὑρήσει γρηγοροῦντας. ἀμὴν λέγω ὑμῖν, ὅτι περιζώσεται καὶ ἀνακλινεῖ αὐτοὺς καὶ παρελθὼν διακονήσει αὐτοῖς.*

(ii) *ἐν ἀγάπῃ ἐῤῥιζωμένοι καὶ τεθεμελιωμένοι ἵνα ἐξισχύσητε καταλαβέσθαι σὺν πᾶσι τοῖς ἁγίοις, τί τὸ πλάτος καὶ μῆκος καὶ βάθος καὶ ὕψος, γνῶναι τε τὴν ὑπερβάλλουσαν τῆς γνώσεως ἀγάπην τοῦ Χριστοῦ, ἵνα πληρωθῆτε εἰς πᾶν τὸ πλήρωμα τοῦ θεοῦ.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, OEDIPUS COLONEUS.

1. Decline fully: *πλοῦς, κάλως, κακότης, κόρυς, φώρ, εἶδος, σέλας.*

2. How are *οὐ* and *μὴ* used in conditional sentences (i) in protasis and apodosis, (ii) in oratio recta and obliqua.

3. Do you consider the subjunctive and optative as forming one mood or two? What would you consider the most general meaning of these moods to be?

4. Explain the following uses of the dative, with parallel passages:

(i) *τὰ ἐμοὶ πεπολιτευμένα.*

(ii) *δέξατό οἱ σκῆπτρον.*

(iii) *ἀναξίαι γὰρ πᾶσιν ἐστε δυστυχεῖν.*

5. Translate, with marginal notes:

THUCYDIDES, IV. c. 10.

SOPHOCLES, *Oedipus Coloneus*, 258—281.

6. Translate:

His faith in his own scheme was strong even to martyrdom, and the eloquence with which he illustrated and defended them had all the charms of sincerity and enthusiasm. Very seldom has any blunder committed by fools, or any villany devised by imposters, brought on society miseries so great as the dreams of these two friends, both of them men of integrity, and both of them men of parts, were destined to bring upon Scotland.

7. Translate:

(i) *ὑμεῖς ἐκ τῶν κάτω ἐστέ, ἐγὼ ἐκ τῶν ἄνω εἰμί· ὑμεῖς ἐκ τοῦ κόσμου τούτου ἐστέ, ἐγὼ οὐκ εἰμὶ ἐκ τοῦ κόσμου τούτου. εἶπον οὖν ὑμῖν, ὅτι ἀποθανεῖσθε ἐν ταῖς ἁμαρτίαις ὑμῶν· ἐὰν γὰρ μὴ πιστεύσητε ὅτι ἐγώ εἰμι, ἀποθανεῖσθε ἐν ταῖς ἁμαρτίαις ὑμῶν.*

(ii) *ὡσαύτως δὲ καὶ τὸ πνεῦμα συναντιλαμβάνεται ταῖς ἀσθενείαις ἡμῶν. τὰ γὰρ τι προσευξώμεθα καθὸ δεῖ, οὐκ οἴδαμεν, ἀλλ' αὐτὸ τὸ πνεῦμα ὑπερεντυγχάνει ὑπὲρ ἡμῶν στεναγμοῖς ἀλαλήτοις.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Give the feminine of *cheval, ours, loup, dindon, mouton, canard*; and the plural of *tout, lui-même, clou, heureux, œil, maréchal, bal, lequel.*

2. Give the imperfect indicative of *manger, haïr, partir*; the future of *aller, envoyer, prendre*; the imperative of *s'en aller, s'asseoir*; the present subjunctive of *rire, manquer, savoir.*

3. Translate: *Le Directoire,* p. 16, l. 9 to p. 17, l. 3; also p. 61, ll. 6 to 32. Write a short life of Danton and of Robespierre.

4. How do you translate *to, in,* and *from* before names of places and countries? Make a sentence to illustrate each case.

5. Translate into French:

He will not give me back the pencil which I lent him.—They have not come to see me for six weeks.—My mother has asked me to shew her the violets in your little garden. She will pick some of them for the little girl who has been ill. Of whom are you speaking? Of our little neighbour (*fem.*). I hope she will soon be better.

6. "Les petites filles que j'ai *rencontrées.*" Parse the word in italics. Give, very clearly, the rule for the agreement of the past participle.

7. Translate into English:

Mourant de faim, un pauvre se plaignait:
Rassasié de tout, un riche s'ennuyait
  Qui des deux souffrait davantage?
Ecoutez sur ce point la maxime du sage:
  De la douleur et de l'ennui
  Connaissez bien la différence:
L'ennui ne laisse plus de désirs après lui;
Mais la douleur près d'elle a toujours l'espérance.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Junior Paper, No. 3.

2. Distinguish between *un homme brave* and *un brave homme; un bon mot* and *une bonne parole; une robe neuve* and *une nouvelle robe; l'année dernière* and *la dernière année.*

3. Which adjectives usually precede, and which follow the noun? Give examples.

4. Translate: *Le Misanthrope,* Act I. Sc. i., "*Alceste.*—Non, je ne puis souffrir," to "point du tout mon fait."

Derive *fat, faquin, chaleur, bruit, plaiderie.*

5. Give the present indicative of *s'asseoir, vouloir, croître, boire*; the preterite of *faire, naître, suivre, falloir*; the subjunctive present of *mouvoir, mentir, acquérir.*

6. Translate into English:

Tout s'use avec le temps, même la loyauté:
Et la faim de Mignon a longtemps résisté.
Il gratte la terrine, et puis fait une pause;
Sa patte sur le bord nonchalamment se pose;
Il jette sur la croûte un regard de côté.
Il flaire le couvercle il le lève, il s'arrête;
Il tourne et rétourne la tête;
Mais son palais en est fort humecté.

7. Give, with examples, the chief rules for the formation of adverbs.

8. Translate into French:

I received one morning a message from poor Goldsmith, that he was in great distress, and, as it was not in his power to come to me, begging I would come to him as soon as possible. I sent him a guinea, and promised to come to him directly. I accordingly went as soon as I was dressed, and found that his landlady had arrested him for his rent, at which he was in a violent passion. I perceived that he had already changed my guinea, and had a bottle of Madeira and a glass before him.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Make a brief abstract of *Horace* and *Le Menteur*. Translate: *Horace*, Act I. Sc. iv., "*Curiace.*—Que faisons-nous, Romains?" to "ne feront qu'un Empire"; and *Le Menteur*, Act I. Sc. v., "*Borante.*—Comme à mes chers amis," to "nos plaisirs."

2. "En vain contre le Ciel un ministre se ligue,
Tout Paris pour Chimène a les yeux de Rodrigue."
Explain this allusion.

3. Distinguish between *plus tôt* and *plutôt*; *tout à coup* and *tout d'un coup*; *une couple* and *un couple*; *une hymne* and *un hymne*. What is the peculiarity in the gender of *gens*?

4. Translate:

Many a little makes a mickle.—A short life and a merry.—It's all the same to me.—They want to make a cat's paw of you.—Silence gives consent.—We cannot get rid of him.

Une bon fois.—Une fois n'est pas coutume.—A la bonne heure.—Etre né coiffé.—Rire sous cape.—Une bonne aubaine.

5. State the rules for (i) the continuance of the Latin accent; (ii) the suppression of the short vowel, (iii) the loss of the medial consonant. Give examples to illustrate each case.

6. What was the influence of Malherbe upon the French language?

7. Translate into French:

His escape was attributed partly to his own singular equanimity, partly to the intrepid and indefatigable friendship of Bentinck. From the hands of Bentinck alone William took food and medicine. By Bentinck alone William was lifted from his bed, and laid down in it. "Whether Bentinck slept or not while I was ill," said William to Temple, with great tenderness, "I know not. But this I know, that during sixteen days and nights, I never once called for any thing but that Bentinck was instantly at my side."

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate, *Ernst, Herzog von Schwaben*, p. 70, "Nach wohlerfochtnem Siege" to p. 71. "den Heimzug fort."

Parse *zogen, böser, dahin, frühen, abgewandt, beschämt.*

2. How are participles used in German?

When is the infinitive substituted for the participle?

When is *worden* used?

3. Distinguish between the strong, weak, and mixed conjugation of verbs. Give two examples of each.

4. Translate:

(i) I am going out this morning.

(ii) At what time does the sun rise?

(iii) I was persuaded to do this.

(iv) I would have helped you, if I had been able.

(v) He arrived this morning.

5. How can you tell the gender of compound words in German? Give the gender of *Oelberg, Mörderhand, Wetterstrahl, Schlachtgefild, Vaterland.*

6. Translate (without a dictionary):

Es ist ein Bäumlein gestanden im Wald
In gutem und schlechtem Wetter;
Das hat von unten bis oben
Nur Nadeln gehabt statt Blätter;
Die Nadeln die haben gestochen,
Das Bäumlein hat gesprochen. RUECKERT.

7. Translate:

"See what a beautiful bird I have caught," cried a little boy, as he ran in from the garden. "It was sitting on a tree, and its wings were shining like gold and silver, only it is much more beautiful. Then I stepped softly up to it, and caught it directly."

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate, *Der Staat Friedrichs des Grossen*, p. 48, "Als die Provinz" to p. 49, "Immanuel Kant."

Explain the meaning of *durch* in *durchzubringen*. Quote other verbs where it is similarly used.

Who was Kant?

2. Junior Paper, No. 1.

3. Translate:

Aber dieser letzte Landgewinn des Königs dem Kanonendonner und Siegesfanfare so sehr fehlten, war doch von allen grossen Geschenken welche das deutsche Volk Friedrich II. verdankt, das grösste und segensreichste.

What is the province here referred to?

Explain the reasons for the opinion expressed here.

4. What is meant by the supine in German? When is it used?

5. Rewrite the following, altering the order of the words:

(i) Gewonnen ist uns heut der erste Sieg.

(ii) Nicht wie zum Angriff naht sich diese Schaar.

(iii) Und nicht gedenk' ich, dich darum zu schelten.

6. Translate:

Ich habe es unternommen, die Geschichte Roms zu erzählen; ich werde in der nacht des tiefen Alterthums beginnen, wo angestrengte Forschung bei dem schwachen Licht später und zweifelhafter Sagen, kaum einige der Hauptmassen des uralten Italiens zu unterscheiden vermag, und wünsche bis zu den Zeiten hinabzugehen in denen eine zweite Nacht Alles, was wir in der langen Reihe von Jahrhunderten entstehen und altern sahen, in Gräber und Trümmer versunken, mit beinahe gleich tiefer Feinterniss verdeckt. NIEBUHR.

7. Translate:

Scarcely had these slowly-working influences brought about this unity, when other influences began to threaten it. New foes assailed the frontiers; while the loosening of the structure within was shewn by the long struggles for power which followed the death or deposition of each successive emperor.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Translate:

Willst du über Werke der Kunst urtheilen so siehe aufänglich hin über das, was sich durch Fleiss und Arbeit aupreiset, und sey aufmerksam auf das, was der Verstand hervorgebracht hat; denn der Fleiss kann sich ohne Talent zeigen, und dieses erblicket man auch wo der Fleiss fehlet. Ein sehr mühsam gemachtes Bild vom Maler oder Bildhauer ist, bloss als dieses mit einem mühsam gearbeiteten Buche zu vergleichen. Denn, wie gelehrt zu schreiben nicht die grösste Kunst ist, so ist ein sehr fein und glatt ausgepinseltes Bild allein kein Beweis von einem grossen Künstler.

WINCKELMANN.

2. Enumerate Winckelmann's writings. What influence had he on Lessing?

3. Give briefly the argument of the *Laokoon*. What were Lessing's other critical writings? What circumstances led to the composition of the *Hamburgische Dramaturgie*?

4. How are the following used, and what gender are the words formed from them? *ing, ung, chen, niss, heit, schaft, thum.*

Where you can, give the cognate English form.

5. Translate the following, and account for the place in the sentence of the words in italics:

(i) Dennoch *erlaubte ihm* weder sein Stolz noch sein Vortheil, sich selbst zu diesem Posten zu *drängen*.

(ii) Er blieb dabei, dass er bei mir anfragen *würde* ob ich sein Glück mit ihm theilen *wollte*.

(iii) *Euch künd* ich's an, damit ihr's Alle *wisset*.

6. Translate:

The wise workman will not regret the poverty or the solitude which brought out his working talents. The youth is charmed with the fine air and accomplishments of the children of fortune. But all great men come out of the middle classes. 'Tis better for the head, 'tis better for the heart. Marcus Antoninus says that Fronto told him "that the so-called high-born are for the most part heartless," whilst nothing is so indicative of deepest culture as a tender consideration of the ignorant.

EMERSON.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Add together 53 guineas, 107 pounds, 161 half-guineas, 55 half-sovereigns, 220 half-crowns, 505 fourpenny pieces, and 603 farthings.

2. Divide £2 10*s.* 10½*d.* between 3 women and 2 men, giving to each woman three times as much as to each man.

3. Find the L.C.M. of 36, 63, 84, and 28; also the H.C.F. of 95469 and 359784.

4. If 10 men do a piece of work in $5\frac{1}{4}$ days of 13 hours each, in how many days of 9 hours each will they do the same?

5. Find a number which has to 40 the ratio that $3\frac{3}{4}$ has to 3; also find the fourth proportional to $\frac{2}{7}$, 17, and $1\frac{1}{2}$.

6. Simplify (i) $\frac{3}{4} \times \frac{7}{11} \times 8\frac{1}{8} \div \frac{3}{8}\left(7\frac{3}{4} + \frac{5}{2}\right)$;

(ii) $\dfrac{\frac{10}{3} + \frac{5}{6} - \frac{20}{21}}{\frac{5}{6} - \frac{4}{7}}$;

(iii) $\dfrac{\frac{3}{5}}{\frac{8}{9}} + \dfrac{\frac{5}{8}}{2\frac{1}{2} \times 1\frac{1}{3}} \times \dfrac{1}{80}$.

7. Reduce ·848, ·375, ·625, and ·016 to their equivalent vulgar fractions.

8. Add together 3·008, 4·8078, ·006, 1201·6, and ·8002.

9. Multiply 271·65$\dot{3}$ by 3·72, and divide 587·20$\dot{8}$ by 3·72.

10. How long will it take to walk round a square field containing 13 acres 81 yards at the rate of $3\frac{1}{2}$ miles an hour?

11. Find the cost of papering a room 21 ft. long, 15 ft. wide, 12 ft. high with paper $2\frac{1}{2}$ ft. wide at 9*d.* a yard, allowing for a door 7 ft. high and 3 ft. wide, 2 windows reaching to the ground each 5 ft. high and 3 ft. wide, and a panelling 2 ft. high round the floor.

12. Find two numbers whose H.C.F. is 179 and L.C.M. 56385, and difference 10382.

13. Find the value of 23 cwt. 1 qr. 23 lb. at £3 18*s.* 9*d.* per cwt.

14. If 1 ox equal in value 8 sheep, 3 oxen equal 2 horses, and 1 sheep be worth £2 10*s.*, what is the value of each horse?

15. At what time between 2 and 3 o'clock are the hands of a clock (i) opposite and (ii) at right angles?

16. What sum at 5 per cent. will amount to £57 17*s.* 7½*d.* in three years' time?

ANSWERS TO *SEPTEMBER* PAPER.

1. 220687 farthings, 160539 inches. 2. 13 mi. 7 fur. 201 yds. 1 ft. 6 in.
3. £539915 16*s.* 9*d.* 4. 495450, rem. 756. 5. $1\frac{1}{3}d.$ 6. $360\frac{1}{2}$ yds.
7. £1 5*s.* 8. 2. 9. £1024 4*s.* 8*d.* 10. $\frac{13}{16}$, $\frac{5}{6}$.
11. *A*, £94668 11*s.* $9\frac{33}{347}d.$; *B*, £123069 3*s.* $3\frac{141}{347}d.$; *C*, £147262 4*s.* $11\frac{161}{347}d.$
12. 46·9; ·378. 13. 24813·23. 14. 70 ft. 3 in. 8′ 10″ 4‴.
15. 742, 837. 16. 10·55 A.M.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Define fully the terms axiom, postulate, hypothesis, affirmative proposition, negative proposition, direct demonstration, indirect demonstration. Give examples of each.

2. Describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

3. If two exterior angles of a triangle be bisected, and from the point of intersection of the bisecting lines a line be drawn to the opposite angle of the triangle it will bisect that angle.

4. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

5. Shew how to produce a given line so that the rectangle contained by the whole line thus produced, and the produced part, shall equal the square on the part produced.

6. Describe a circle passing through three given points not in the same straight line.

7. In a given circle place a straight line equal and parallel to a given straight line not greater nor equal to the diameter of the circle.

8. If the angle of a triangle be divided into two equal angles by a straight line which also cuts the base, the segments of the base shall have the same ratio which the other sides of the triangle have to one another; and conversely, if the segments of the base have the same ratio which the other sides of the triangle have to one another, the straight line drawn from the vertex to the point of section divides the vertical angle into two equal angles.

9. Junior work, No. 1.

10. If each of the equal angles of an isosceles triangle be one-fourth of the third, and from one of them a line be drawn at right angles to the base meeting the opposite side produced, the perpendicular of the remaining side and the part produced will form an equilateral triangle.

11. If two equal triangles be between the same parallels, they are upon the same or equal bases.

12. If the line joining two parallel lines be bisected, all the lines drawn through the point of bisection and terminated by the parallel lines are also bisected in that point.

13. If a straight line be divided into any two parts, four times the rectangle contained by the whole line and one of the parts together with the square on the other part is equal to the square on the straight line which is made up of the whole and that part.

14. Divide a line into such parts that the sum of their squares shall be double the square on another line.

15. If a point be taken within a circle from which there fall more than two equal straight lines to the circumference, that point is the centre of the circle.

16. Draw a tangent to a given circle from a given point (i) without the circle, (ii) on the circumference of the circle.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—13 inclusive.
Higher Local work Nos. 8—17 inclusive.

1. Simplify:

(i) $\dfrac{x^2-px-2p^2}{x^2-(2p+q)x+2pq}-\dfrac{x^2+px-2p^2}{x^2+(2p+q)x+2pq}$;

(ii) $\{(x^2+2y^2)^2-(x^2-2y^2)^2\}\{(2x^2+3y^2)^2-(2x^2-3y^2)^2\}$.

2. Solve the equations:

(i) $x^2-3xy-4y^2=50$, $2x^2-xy-3y^2=150$;

(ii) $x^2-7x+4+\sqrt{x^2-7x+8}=76$;

(iii) $x^2-9xy+20y^2=30$, $3x^2-8xy-16y^2=144$.

3. If there be four numbers, the product of the sum of the squares of the first and second, and the sum of the squares of the third and fourth is equal to the square of the sum of the product of the first and third, and the product of the second and fourth increased by the square of the difference of the product of the first and fourth and the product of the second and third.

4. Find how many terms of $2+5+8+\ldots$ amount to 126.

5. Prove that if $\dfrac{x+y-z}{ax+by+cz}=\dfrac{z-x-y}{cx-ay-bz}=\dfrac{z+x-y}{az-bx-cy}$, then each ratio $=\dfrac{1}{a-b+c}$.

6. Find the sum of 9 terms of $1+2+3+\ldots$ and the sum of 12 terms of $1+3+5+7+\ldots$

7. If $x-a$ will divide x^2+px+q, prove that a is a root of the equation $x^2+px+q=0$.

8. Shew that a recurring decimal is an example of a G.P. carried to infinity. Hence find the value of $\cdot 12\dot{4}6\dot{3}$.

9. Transform 1456738 from the scale of nine to the scale of twelve.

10. Simplify $\dfrac{(x^{\frac{m}{n}})^p}{(x^{-q})^{\frac{m}{n}}}\div\dfrac{\sqrt{(x^{\frac{m}{n}})^q}}{\sqrt{(x^{-p})^n}}$.

11. Find four numbers in G.P. so that their sum may be 45, and the sum of their squares 765.

12. If p and q be the roots of the equation $x^2+px+q=0$, shew that the roots are both positive if p be negative and q positive, and form the equation whose roots are $\frac{p^4}{q^2}, \frac{q^4}{p^2}$.

13. Shew that the coefficient of x^{r-1} in $(1+x)^{n+1}$ is the sum of the coefficients of x^r and x^{r+1} in $(1+x)^n$. Use the binomial theorem to approximate to the cube root of 25.

14. Find the harmonic mean between $\frac{2a}{a+b}$ and $\frac{2a}{a-b}$.

15. Write down the coefficient of y in the expansion of

$$\left(ay^2+\frac{c^4}{y^3}\right)^3,$$

and the coefficient of x in the expansion of

$$(1+2x-3x^2+4x^3)^3.$$

What terms will contain x?

16. Find in how many ways the sum of £8 16*s*. can be paid in guineas and in florins.

17. Reduce $\frac{1}{3}\frac{2}{4}\frac{3}{5}$ to a continued fraction.

ANSWERS TO *SEPTEMBER* PAPER.

1. (i) $\frac{8}{7}$; (ii) $\sqrt{8}+6\sqrt[4]{-16}$.

2. $x^5+x^4y+2x^3y^2+12x^2y^3-xy^4+5y^5$, rem. $4y^6$.

3. (i) $x=5$; (ii) $x=1, y=3, z=4$; (iii) $x=\frac{a}{4}, y=\frac{b}{4}$. 6. 12.

7. $5+9+13+17+\ldots$

8. (i) $x=9$ or 4, $y=4$ or 9; (ii) $x=4$ or 3, $y=3$ or 4; (iii) $x=\frac{1}{2}, y=\frac{1}{3}, z=\frac{1}{5}$; (iv) $x=b, y=a$. 9. $6+9+4+1\frac{5}{7}+\ldots$

10. $\frac{\underline{|34}}{\underline{|26}} \times \frac{\underline{|50}\ \underline{|50}}{\underline{|8}\ \underline{|8}}$. 13. $\frac{\underline{|8}}{\underline{|r-1}\ \underline{|9-r}} \times 2^{r-1} \times \frac{x^{18-2r}}{x^{3r-3}}$.

14. 432; 1234. 15. $x^2-58x+441=0$. 16. $30\underline{|7}$.

17. $(x^3-y^3)-(x-y)^2=2xy-2y^2$.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Demonstrate the following identities:

(i) $(2\cos A \sec A + \cos A \tan A)(\sec A\, 2\tan A) = 2\cos A - 3\tan A$.

(ii) $\cos^2 A - \cos^2 3A = \sin 2A \cos 4A$.

2. Prove geometrically that $\cos 2A = 2\cos^2 A - 1$.

3. ABC is a right-angled triangle, $A = 67^\circ\ 22'\ 48{\cdot}5''$, $C = 13$, solve the triangle, having given

$$\sin 67^\circ\ 22' = {\cdot}9229865,\ \sin 67^\circ\ 23' = {\cdot}9230984.$$

4. Shew that $\tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{5} = \frac{\pi}{4}$.

5. If the number of births in a year be $\frac{1}{45}$ of the population at the beginning of the year, and the number of deaths $\frac{1}{50}$, find in what time the population will be doubled, having given

$$\log 2 = {\cdot}30103,\ \log 3 = {\cdot}4771213,\ \log 451 = 2{\cdot}6541765.$$

6. Shew that the change of the logarithm of a number is approximately proportional to the change of the number.

7. Describe fully the forces at work in the motion of an ordinary hinge joint.

8. Shew that if a body be in equilibrium on a horizontal plane, the vertical line through the centre of gravity of the body must fall within the base of the body.

9. Find the centre of gravity of a plane triangle, and shew that it coincides with that of three equal heavy particles placed at the angular points.

10. A body is projected vertically upwards with a velocity of 96 ft. per second; what will be the velocity, and what its position, at the end of 13 seconds?

11. Shew that the range of a projectile on a horizontal plane is a parabola. Find the angle of projection which gives the maximum range.

12. Prove that when two smooth balls impinge upon one another, either directly or obliquely, the motion of the centre of gravity is unaltered by the impact.

Higher Mathematics.

Women.

Trigonometry and Conics.

1. Solve the equations:

(i) $\sin 4\theta + \sin 2\theta + \cos\theta = 0$; (ii) $\tan^2\frac{\theta}{2} + \cot^2\frac{\theta}{2} = 8\cot\theta - 2$.

2. Shew how to solve a triangle, having given two angles and a side. Ex.: $A = 45°$, $B = 10°$, $C = 200$, find a having given

$\log 2 = \cdot 30103$, $L\sin 55° = 9\cdot 9133645$,
$\log 172\cdot 64 = 2\cdot 2371414$, $\log 172\cdot 65 = 2\cdot 2371666$.

3. Shew how to find the radius of the circle inscribed in a polygon of n sides. If a, b, c be respectively the sides of a regular pentagon, hexagon, and decagon inscribed in a circle, shew that

$$a^2 = b^2 + c^2.$$

4. Prove that

$$2\tan^{-1}\left[\tan\frac{\alpha}{2}\sqrt{\left\{\tan\left(\frac{\pi}{4} - \beta\right)\right\}}\right] = \cos^{-1}\frac{\cos\alpha + \tan\beta}{1 + \cos\alpha\tan\beta}.$$

5. Prove that the limit of $\cos\frac{x}{2}\cos\frac{x}{4}\cos\frac{x}{8}\ldots\frac{\cos x}{2^n}$, when the integer n is indefinitely increased, is $\frac{\sin x}{x}$.

6. In a central conic the latus rectum is a third proportional to the transverse and conjugate axes.

7. The semi-latus rectum is a harmonic mean between the segments of any focal chord.

8. Prove analytically that in the ellipse the rectangle contained by the focal distances of any point is equal to the square on the corresponding semi-conjugate diameter.

9. Prove that in the hyperbola the difference of the squares of any two semi-conjugate diameters is equal to the difference of the squares of the semi-axes.

10. Shew how to draw a tangent to a parabola from a given point in the axis.

11. If P be any point on the hyperbola, and CD be conjugate to CP, then $SP \cdot S'P = CD^2$.

12. If through any point R on either of the diagonals of the rectangle formed by drawing tangents to the hyperbola and its conjugate at the vertices A, A' and B, B', two ordinates RPN, RDM be drawn at right angles to AA', BB', and meeting either the hyperbola or its conjugate in the points P and D, then

$$RN^2 - PN^2 = BC^2, \text{ and } RM^2 - DM^2 = AC^2.$$

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. Describe and find the relation between the power and the weight in a system of four moveable pulleys in which each pulley hangs by a separate string.

2. One end of a ladder rests upon rough horizontal ground, the other is placed against a smooth vertical wall; determine all the forces which act on the ladder.

3. Describe the common steel-yard, and shew how to find the relation between its power and weight.

4. An uniform heavy beam is 12 ft. in length, and its weight is 22 lb.; find the moment of the strain at its middle point.

5. A particle falls down the interior of a vertical semi-circle; find the pressure at the lowest point.

6. A body is projected upwards with a velocity V; find how high it will ascend, and also how long a time will elapse before the body again strikes the ground.

7. An inelastic ball of 6 lb. in weight, moving from right to left with a velocity of 25 ft. per second, impinges upon an inelastic ball of 14 lb. in weight moving in the opposite direction with a velocity of 20 ft. per second; determine the motion of the balls after impact.

8. Find what must be the ratio of the masses of two perfectly elastic balls in order that, meeting directly with equal velocities, the larger one may remain at rest.

9. Define the right ascension and the declination of a heavenly body. Name and describe the instruments used for making observations by which these can be determined.

10. Account for the fact that we only see one face of the moon, and shew that we should be only acquainted with the same portion of its surface if the moon rotated on its axis once a year. What difference would be distinguishable in the latter case?

11. Which is the greatest and which the least possible number of eclipses of the sun and moon which can take place in a year? Of these how many will be eclipses of the sun?

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. Define the following terms, giving examples: *atomic weight, atomicity, molecular weight, molecular volume.*

2. What is produced when nitric acid is poured on copper?

3. Explain the terms: *water of crystallisation, effloresce, deliquesce, distil, analysis, synthesis.*

(*b*)

4. What happens when burning sulphur is plunged into (i) nitrogen, (ii) nitrous oxide, (iii) nitric oxide?

5. By what tests can you distinguish tin in the metallic state, or in a compound? How can you prove that a sixpence contains copper?

(*c*)

6. A body has a certain momentum after falling through a certain space. Shew that in order to gain a double momentum it must fall through four times the space.

7. Find the resultant of three forces of 3, 5, and 8 dynes respectively, acting in the same straight line, but the largest force opposite in direction to the other two.

8. A bottle of air is closely sealed on the top of a mountain. If it is brought down to sea level and unsealed under water, some portion of water will rise into the bottle. Explain this.

9. Describe, with a diagram, the construction of an air-pump. Shew that the labour of working it increases with each stroke.

10. Explain how the specific gravity of a substance is determined?

(*d*)

11. Define *specific heat.* What are the changes in the latent heat of water during its conversion from ice to water and from water to steam?

12. How do you account for the coldness of the higher regions of the atmosphere, notwithstanding the great heat that traverses it from the sun to the earth?

13. Find how much ice at 0° C. can be converted into water at 0° C. by an ounce of steam at 100° C.

(*e*)

14. Explain the use of Ruhmkorff's or the induction coil. What difference is there between effects at making and breaking of the primary circuit?

15. Describe experiments proving that equal quantities of opposite electricities neutralise one another.

16. What do you understand by magnetic declination and dip? How is the magnetic dip determined?

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Explain the terms *saprophyte* and *parasite*, as applied to plants.

2. How is respiration effected in vascular plants, and when is it most active?

3. Discuss the influence of light upon the formation of starch.

4. What are heliotropism and geotropism? By what causes are they said to be induced?

(*b*)

1. State briefly the characters of each of the sub-kingdoms into which the animal kingdom is divided.

2. Refer the following animals to their respective sub-kingdoms and classes, and describe also their structure and habits: sea-anemone, lobster, rabbit.

3. Describe and compare the alimentary canals of a ruminant and of a carnivor.

4. State the the character of the ungulata and the rodentia, and give dental formulæ for a typical ruminant and for a rabbit.

(*c*)

1. Define an earthquake, and give some account of its usual effects.

2. Describe the mode of formation of a volcanic cone. Where may ancient volcanoes be traced in Great Britain, and how are they recognised?

3. Give an account of a glacier. What traces of old glaciers remain in localities where the climate is now too mild for them to exist?

4. Learn, and write out from memory, a table of geological formations with their mineral characters and typical fossils.

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. Give examples shewing that when elements combine chemically most of their properties are entirely changed. What property do they always retain?

2. Describe experiments proving that particles must be in absolute contact in order to unite chemically, and that to reduce substances to powder and then to mix them is not sufficient for this purpose.

3. Enunciate the proposition known as the principle of virtual velocities.

On a wheel and axle a power of 7 lb. balances 1 cwt., and in one revolution of the wheel the point of application of the power moves through 32 in. Find what height the weight is raised.

4. Quote Newton's three laws of motion. A weight of 13 lb. is drawn along a smooth horizontal table by a weight of 3 lb. Find the time of describing 147 lb.

5. Explain what is meant by putrefaction, and give the conditions necessary for its occurrence.

6. Distinguish between the reproduction of micor and penicillium, pointing out how one shews a higher development than the other.

(*b*)

1. If a litre of hydrogen weighs ·0896 grammes, what will 3 litres of oxygen weigh?

2. By means of what metals can you decompose water without the aid of an acid? State the composition of water (i) by volume, (ii) by weight.

3. Describe the usual method of preparing hydrogen. Give the properties of hydrogen and an account of the experiments proving them.

4. Find the quantity of oxygen in 50 parts of sulphuric acid.

(*c*)

1. In the second system of pulleys P descends through 12 ft. while W rises through 2 ft. Find the number of strings at the lower block.

2. A particle uniformly accelerated describes 108 ft. and 140 ft. in the fifth and seventh seconds of its motion respectively. Find the initial velocity and the numerical measure of the acceleration.

3. Find the time in which a projectile would reach a plane inclined to the horizon at an angle equal to the angle of projection and bisecting the range on the horizontal plane.

4. Two bodies are moving in the same direction with the velocities 7 and 5, and after impact their velocities are 5 and 6. Find the index of elasticity.

(*d*)

1. Describe in detail the structure of the stem in marchantia. What is peculiar about the leaves?

2. Give an account of the development of the sporogonium in funaria hygrometrica.

3. Draw diagrams illustrating the structure of the stems and roots of the fern and horsetail.

4. How is the oophore formed in selaginella? Compare briefly the alternation of generations in this form and in the moss.

(*e*)

1. Trace the life-history of one member of the group hydra-zoa, shewing how alternation of generations occur in this group.

2. Describe the structure of one of the fibrospongiæ, and compare it with a member of the cœlenterata.

3. What marked characteristics separate the echinodermata from the groups below them? Describe a crinoid minutely.

(*f*)

1. What is the meaning of the terms *physiology, anatomy, morphology,* and *histology*? Shew how in the study of a muscle you would view it from these various sides.

2. Contrast as to structure and action voluntary and involuntary muscle, giving the minute composition of both.

3. What is a muscle curve? Explain the phenomena to be traced in a muscle if a series of induction shocks be sent through it.

4. Define electrotonus, and explain the law of contraction as applied to a nerve.

(*g*)

1. Give a list of the conditions which tend to produce a large rainfall in any locality. How is the land surface affected by rain? Give an example of (i) its chemical action and of (ii) its mechanical action.

2. What substances are carried away by rivers (i) in suspension, (ii) in solution? What becomes of them?

3. Explain the following terms: *strata, formation, escarpment, overlap, outcrop.*

4. Into what groups may igneous rocks be divided? Give examples of these. What are metamorphic rocks, and how may they have become thus altered?

Logic.

Higher Local.

1. Define a proposition. Distinguish between affirmative and negative, simple and complex, hypothetical and categorical propositions. What do you understand by the modality of propositions?

2. Discuss the question whether logic is concerned with the relation between the two ideas corresponding to the subject and predicate of a proposition, or with the two phenomena of which the subject and predicate are names. What answer has been given by Hobbes to the question as to what is the immediate object of belief in a proposition?

3. Point out the difference between verbal and real propositions. Explain what is meant by *essential predication*. How did Locke distinguish real from nominal essences?

4. Explain the expression *distribution of a term*. Shew by examples the difference between propositions contradictory to each other and those contrary to each other. Why are the propositions *I* and *O* called subcontraries of each other and *E* and *O* subalterns of each other?

5. Define the terms *inference* and *conversion*. Explain and give examples of the different sorts of conversion of propositions.

6. What is meant by the doctrine of the predicables, and with whom did it originate?

Explain the following: "The distinction, therefore, between *differentia, proprium,* and *accidens* is not founded in the nature of things, but in the connotation of names."

7. Explain the terms: infima species, summum genus, sui generis, homogeneous, heterogeneous, fundamentum divisionis, circulus in definiendo, ignotum per ignotius.

8. What is a definition? Is there any real distinction between definitions of names and definitions of things? What was meant by the rule that all definition must be *per genus et differentium*?

9. Give from memory the rules of logical definition. Give six incorrect definitions, each one breaking one or more of these rules.

French History.

(*a*) GENERAL, 1100—1223; (*b*) SPECIAL, 1643—1667.

(*a*)

1. Examine the statement that Louis VI. was "the great founder of the royal power of France."

2. Give a short account of (i) Bernard of Clairvaux, (ii) Sager, (iii) Abelard.

3. Give the history of the struggle between England and France in the reigns of Louis VII. and Philip II.

4. Sketch the character of Philip Augustus.

(*b*)

5. What do you know of the Jansenist movement?

6. Sketch the life of Cardinal Mazarin, and compare his administration with that of Richelieu.

7. What was Louis XIV.'s plan of government? Shew how it affected the position of ministers.

8. What exactly were the grounds on which Louis XIV. based his claim to the Netherlands on the death of Philip IV. of Spain?

Constitutional History.

1066—1135.

Group H.

1. Examine the statement that "the English kingship is elective." Notice especially the titles of the three kings who came to the throne during this period.

2. Examine the origin and nature of feudalism. How far may feudalism be said to have been introduced into England by the Norman conquest?

3. General Paper, No. 4.

4. Give some account of Domesday survey, with reference to (i) its probable object, (ii) the method employed to collect facts, (iii) its historical value.

5. Compare the constitution and functions of the Norman Curia Regis with (i) the Anglo-Saxon Witan, (ii) a modern parliament.

6. "The Exchequer court was the great work of the reign of Henry I." Give an account of its constitution and functions. Analyse the various courses of revenue during the Norman period.

Political Economy.

Higher Local.

1. Give Mill's fourth proposition respecting capital. What do you consider he really means by it? What important conclusions do you gather from the principle contained in this proposition?

2. (i) Define *science* and *art*.

(ii) What reasons have been given for considering Political Economy as a science only, and not an art? Give your own opinion on the subject.

3. Give a short sketch of the present state of the English poor law. Discuss briefly the advantages and disadvantages of the present system. Suggest improvements, and give your opinion of compulsory national insurance.

4. (i) What are the possible sources of the accumulation of capital?

(ii) "The chief source of saving during the greater part of the world's history is not the chief source in England at the present time." Explain this fully.

5. Senior Paper, No. 1.

6. Senior Paper, No. 3.

7. Senior Paper, No 4.

8. Senior Paper, No. 6.

Political Economy.

Senior.

1. Give and explain the law of diminishing return. Contrast it with the law of increasing return, and shew how these laws affect the price of corn, coal, pheasants, raw silk, manufactured silk.

2. What do you mean by the "real net produce of a country"? How can that net produce be increased?

3. Why would you expect a country possessed of a good government to have more capital than another country which had a bad government? Can you imagine any circumstances under which the latter country would possess most capital?

4. Why is it economically important that the standard of comfort of the poorest classes in England should be raised? How do you consider that education will tend to raise it?

5. What evils are likely to arise from the sudden conversion of a considerable amount of circulating capital to fixed capital? Shew that these evils are usually only temporary.

6. One man expends his labour in making lace, and another in making ploughs; shew the economic difference between the results of their labour.

7. "If one of our ironclads sank and we had to replace it, this destruction of wealth would not be good for trade." Prove the truth of this remark. A superficial observer might imagine that he had reason for considering the loss as beneficial to trade; explain this.

8. Higher Local Paper, No. 2 (i).

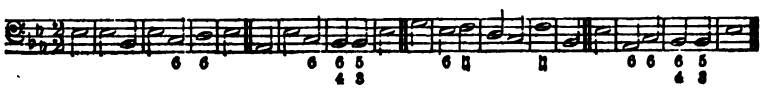
9. Higher Local Paper, No. 4 (i) (ii).

Music.

Junior and Senior.

1. Explain perfect and plagal cadences, and write an example of each in the keys of B flat major and B flat minor. How would you describe cadences which were neither perfect nor plagal?

2. How do you determine whether a piece of music is in the major key of the signature or its relative minor?

3. Harmonise the following figure bass in four parts, and write the exercise in vocal score. Write the ground-notes on a separate stave below the bass:

4. What intervals form the chord of the dominant 7th? Can a similar chord be formed on any other degree of the scale than the dominant?

Name and explain its inversions, and say how they and the original chord are figured.

5. What is meant by *resolution*, and what is the most natural resolution of the chord of the dominant 7th? Explain another resolution which is also common.

6. Write in four parts the chord of the dominant 7th, and its inversions in the keys of F major, and its tonic and relative minors, and follow each by a suitable resolution. Figure the bass.

7. What is a *false relation*?

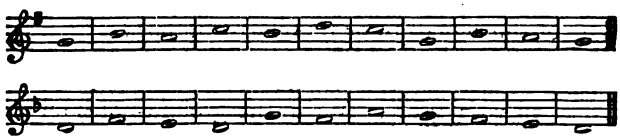
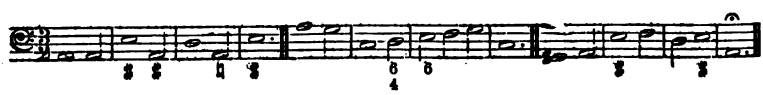
8. Explain *una-corda, tre-corde, cantando, con grazia, subito.*

Senior Students only.

9. Add alto, tenor, and bass parts to the following melody, using common chords and chords of the seventh, with their inversions:

Music.

Higher Local.

1. Write two-part counterpoint of the 1st species to the following subjects, placing them alternately in the upper and lower parts:

2. Harmonise in four parts (adding soprano, alto, and tenor) the following figured bass, and write the exercise in vocal score:

3. Describe in detail the growth of what is now known as the "first movement form" from its earliest germ as seen in the *Brawl* and *Chorale* to the period of Emmanuel Bach inclusively.

4. (i) Name and explain the different classes of organ stops, and give the distinguishing characteristics of the great, swell, and choir organs.

(ii) Describe the action and effect of the loud and soft pedals of the pianoforte, and give the words and signs which indicate them.

(iii) Give the general compass of soprano, mezzo-soprano, contralto, tenor, baritone, and bass voices.

Answer only one section of Question 4.

5. Write an essay on "Modern Opera; Italian, German, and Comic."

Teachers' Examination.

The Theory, History, and Practice of Education.

Special Subjects: *The Life and Work of Pestalozzi; Milton's Tractate on Education.*

1. Discuss the claims of education to be considered a science. Name the chief modern writers on education.

2. What studies should be included in the professional training of teachers? What are the chief personal qualities which mark the "heaven-born" teacher?

3. In what sense may Pestalozzi be called an educational reformer? How has his influence affected education since his time?

4. Discuss the place of geography in the school curriculum. What methods would you employ in teaching (i) younger, (ii) elder pupils? What apparatus do you consider essential?

5. What are the relative merits of form-teaching and subject-teaching? Which plan would you adopt in organising a school? Give reasons for your answer, and explain how you would meet any incidental difficulties.

6. Discuss the following dicta on examinations:

(i) Examinations are not to be considered as necessary evils, but as useful parts of school machinery.

(ii) The more formal or certificate examinations should be relegated to the closing years of school life.

(iii) Oral and written work should supplement each other in examinations. Inspection is a valuable auxiliary to examination.

(iv) The function of examination is not co-extensive with that of education.

(v) Sympathy and co-operation between examiners and teachers are essential.

(vi) Education should mould examinations, not examinations mould education.

Editorial.

We are in some form or other frequently asked if we will not alter somewhat our arrangements in one particular, and we have replied to the suggestions for change in that respect that they shall have our careful consideration. We therefore take this opportunity to state the result of our thoughts, and to give our reasons for not at present making any alterations; at the same time, if we find the majority of our students still think the change they ask for desirable, we may reconsider our decision. That which is suggested is, either that we publish on the first of the month, and receive the answers on the last day of the same, or that we shall, at the end of each paper, give the limits of the succeeding paper, that students may know exactly upon what the next questions will be which they will have to answer. The object of both suggestions is identical—it is, shortly, to have always a definite amount of work given, to be done within a certain time. In starting the *Examiner* we considered whether we should give this or not, and decided that we would not, because we should not consider that a good and honest preparation for an examination which took the form of merely preparing the answers to particular questions. We consider it most desirable that students should have half of every month for reading, independent of our questions, which may rightly direct attention to special points during the remainder of the month. In all subjects as far as possible we divide our courses into nine portions, taking one new and questioning on back work each month. If, therefore, our students work regularly, they should always find that the major portion of each month's paper comes upon that part of their subject which they are about to read or have most recently read. To those who look upon examinations only as means of pecuniary advantage it may appear strange to speak of their ethical value, but we are convinced that they have one, and are desirous to make that realised and gained, which we hardly feel we should be likely to do did we undertake the entire direction of each student's preparation and study.

We have not left space for remarks on September papers, which is the less to be regretted as many are hurriedly and indifferently done, as though the holidays had not been long enough over for regular work to have been got into, which is a probable and not unpardonable excuse. This month we shall expect more.

It will oblige if students will always give the title of each paper at its head. To see a paper beginning, "To speak of the Salic law as a desirable measure," may induce one to place it with History, English or French, whereas it happens to be a paraphrase in an English Literature paper.

Religious Knowledge.

Junior and Senior.

(*a*) 1 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM; (*e*) PRAYER BOOK; (*f*) PALEY'S HORÆ PAULINÆ.

(*a*)

1. Give a brief sketch of the principal historical events recorded in this book.

2. Which of the kings of Israel and Judah may be regarded as reformers of the national religion?

3. What miraculous occurrences are recorded in this book?

(*b*)

4. What part of this Gospel has given rise to critical difficulties? What changes of style have been noticed in this section?

5. Divide, if you can, the parables of this Gospel into an Early, an Intermediate, and a Final group.

6. What works of Christ were performed in northern Galilee? To what places did He retire while in this district?

7. Enumerate in order the events which took place in Holy Week.

(*c*)

8. Account for the unsystematic character of this Epistle. What account does St. Paul give of the visions and revelations vouchsafed to him?

(*d*)

9. What are to be the subjects for self examination before approach to the Lord's Supper?

(*e*)

10. Analyse the Te Deum and the Benedictus. What was the latter called in the old Offices?

(*f*)

11. What writers in the early Christian Church either quoted from, or alluded to, the letters of St. Paul?

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS, BK. III., lxxiii.—cvi. II. NEW TESTAMENT: ST. JOHN; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.; (*b*) HOOKER'S ECCL. POL., PREFACE AND BK. I.; (*c*) PALEY'S HORÆ PAULINÆ, CHAP. 1—5.

I.

1. Jer. xiii.—xx., xxii.—xxiii., xxxv.—xxxvi., xlv.—xlix. 33, during the reign of Jehoiakim, B.C. 610—599. Explain the succession of the sons of Josiah. Under what influence was Jehoiakim placed on the throne? Comment on the battles of Carchemish, and give their dates and their consequences. The history seems to be resumed, chap. xx. Relate the treatment which the prophet experienced at the hands of Pashur, and of the priests and prophets (chap. xxvi.), in consequence of his prophecy (chap. xxii.). Notice the episode of Urijah.

2. Give a brief account of the Rechabites. Why were they then at Jerusalem? Comment on the writings of "the roll." What important events occurred in B.C. 606? When did the seventy years' captivity begin? Relate the circumstances of Jehoiakim's death.

3. Explain the symbols of the "marred girdle" and the earthen bottle. How may the journeys to Euphrates be understood?

Give context and discuss:

(i) "Is this man Coniah, a despised broken idol?"

(ii) "I will make this house like Shiloh."

4. Pss. lxxxiv.—lxxxix. Explain the inscriptions of Pss. lxxxiv., lxxxviii., lxxxix. (See Numb. iv. 2; 1 Chron. vi. and xv.; 1 Kings iv. 31.) What are the marks of the Kohathite psalms? Discuss the authorship of Ps. lxxxvi. For what ceremonies may Ps. lxxxvii. have been composed? Compare it with Isai. xix. 22—25; explain verse 4.

Ps. lxxxviii. 5, 10. Compare Ps. lxxxix. 47. Do these passages contain an allusion to the resurrection?

Ps. lxxxix. 3, 30—37. Compare 2 Samuel vii. 16.

Give context and explain:

(i) "Sons of the mighty." (ii) "The Lord God is a sun."

(iii) "Amen and Amen."

II.

5. St. John i. 19—iv. To what earlier gospel does St. John probably refer (chap. i. 32, iii. 24)? Comment on the baptisms of Christ and of John, and on the different occasions on which the Baptist bore witness to Christ. Compare chap. i. 21 with Matt. xi. 14, and explain the seeming contradiction. Which of the Apostles were former disciples of the Baptist?

6. On what occasions did Christ first officially manifest Himself as the Son of God to the Jews first, and afterwards to the Gentiles? Who had already recognised Him as such? What is the distinguishing feature of the miracles peculiar to St. John's Gospel?

7. Comment briefly on Christ's discourses with Nicodemus, and with the Woman of Samaria; also on the following quotations:

(i) "Art thou that prophet?" (ii) "Forty-six years was this temple building." (iii) "The Jews." (iv) "Our father Jacob."

8. To which of St. Paul's visits to Jerusalem is reference made (Gal. ii.)? Where do we learn his motives for going thither, the chief subject of dispute, and the decision of the Church at Jerusalem on the matter? What personal experience is added in the Epistle? What does St. Paul declare to have been the motives of these Judaizers? What is his own claim on their obedience (chap. i. 1, ii. 6—9)?

III. (*a*)

9. How does Butler propose to answer those persons who indulge in speculation as to how the world might have been framed and governed in a better manner than at present? How would he refute those who argue that the light of Nature suffices for our guidance? or those who regard revelation as of little importance, if piety and morality be practised? What does he here say of miracles, and of what now takes their place in the propagation of Christianity?

(*b*)

10. Hooker gives ten stages of the discipline with reasons for its popularity, followed by a brief summary of the whole system. Give the latter briefly, together with his arguments against a return to Apostolic discipline, and his remarks on the authority of the reformed churches abroad. On what conditions would he gladly consent to a public discussion of the matter? What is his advice meanwhile?

(*c*)

11. Enumerate the different points of Paley's argument of undesignedness. What does he remark on St. Paul's writings, and argue therefrom as to their consistency and independence? Give the purpose of his work, and shew what will answer its design. How does it differ from former works on the same subject?

English History.

Junior and Senior.

FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH.

For General Questions on History and Geography see pages 471 and 472.

1. Shew by a genealogical table the descent of Henry VII. Give a short account of any of his ancestors descendants of John of Gaunt, who took a prominent part in public affairs.

2. Give a short account, also the date, of the capture of Constantinople under Mahomet II. What effect had that event on the culture of Western Europe?

3. What circumstances caused Henry VIII. to go to war with Scotland? Describe and give the date of the battle of Flodden.

4. Sketch briefly the life of Cardinal Wolsey. Describe as fully as possible his character. Account for his popularity with the King, his action with regard to the Church, his foreign policy, and his downfall.

5. Trace the course of the Reformation in Europe to 1521, also its progress in England previous to the death of Henry VIII. Indicate the different positions in which Wolsey, Cromwell and Henry VIII. stood to it.

6. Give the date and conditions of the Great Intercourse, Annates Act, Act of Appeals, Succession Act, Act of Supremacy, Act of Uniformity.

7. What were the sources of the discontent of both nobles and peasants which found expression in the insurrections of 1536 and 1537? Describe the Pilgrimage of Grace.

8. What circumstances led to the battle of Pinkie? Give its date and result.

9. What claim had Mary to the throne? Indicate her ecclesiastical policy, and discuss the possibility of its having forwarded the Reformation. Give a short account of Ridley and Latimer.

10. Give a summary of the most important events in the reign of Elizabeth, with their dates, also a short account of every person you have occasion to mention in so doing.

English History.

Higher Local. Group H.

(*a*) GENERAL, 1216—1307; (*b*) SPECIAL, 1642—1649.

(*a*)

1. State, as concisely as you can, the position of affairs on the death of John. Explain the nature of the work done by the Earl Marshal as Regent. Write an account of the life and work of Hubert de Burgh.

2. What were the principal causes of the Barons' War? Trace the course of that struggle up to the triumph of Earl Simon, 1264. Account if you can for his fall.

3. Give the terms of

(i) The Provisions of Oxford.
(ii) The Provisions of Westminster.
(iii) The Mise of Amiens.
(iv) The Mise of Lewes.
(v) The Dictum of Kenilworth.

4. Enumerate the chief legislative enactments of Edward I. Give a summary of their contents.

5. Examine into the nature of Edward I's. claims to the overlordship of Scotland. Sketch the wars which it brought upon him.

6. Write a history of the conquest of Wales.

7. Write what you know about

(i) The Parliament of 1264.
(ii) The Model Parliament, 1295.
(iii) The confirmation of the Charters.

(*b*)

1. Give a brief account of the proceedings of the Long Parliament before the outbreak of the war.

2. Give a sketch of the military history of the years 1642—3.

3. Estimate the importance of the entrance of the Scotch and Irish into the struggle. Sketch the military history, 1644—6.

4. Trace the struggle between the Presbyterians and the Independents during the period 1646—9.

5. Give the history of Charles from 1646 to 1649. How far do you think his execution (i) justifiable, (ii) politic.

6. Compare the propositions of 1642 with the terms offered to Charles at Uxbridge, Newcastle, Hampton Court and Newport. Indicate the party who was trying to come to terms with him in each case, also the circumstances of both parties to the negotiation.

English Literature.

Junior and Senior.

KING RICHARD II.

1. What is the central thought of this play? Shew how it is carried out.

2. Compare Richard's character with that of Hamlet.

3. By whom and to whom were the following words spoken?

(i) "My gracious uncle let me know my fault."

(ii) "What subject can give sentence on his king?"

(iii) "A god on earth thou art."

(iv) "They love not poison that do poison need."

(v) "Your cares set up do not pluck my cares down."

4. Give some particulars of the life of John of Gaunt.

5. Paraphrase the passage beginning with the following words: "Thus play I in one person, many people."

English Grammar.

1. What part of speech can generally be moved to different places in a sentence without injury to the sense of the passage?

2. "Strong verbs have a tendency to become weak." Can you illustrate this statement?

3. Give two examples of impersonal verbs. Give three examples of defective verbs.

4. Give the meanings and derivations of the following words: melists, wist, yclept, methinks.

5. Explain the affixes in the following words: streamlet, freedom, hillock, sailor, bishopric, slavery.

English Language and Literature.

Higher Local.

(*a*) HENRY V.; (*b*) BACON'S ESSAYS, I.—XXVIII.; (*c*) MILTON'S PARADISE LOST, I.—IV.; (*d*) HISTORY OF ENGLISH LITERATURE.

(*a*)

1. Explain the following passages, with reference to their context:

(i) "The kindred of him hath been fleshed upon us."

(ii) "For coward dogs
Most spend their mouths when what they seem to threaten
Runs far before them."

(iii) "I have not a case of lives."

(iv) "I knew by that piece of service the men would carry coals."

2. Paraphrase and explain the allusions in the following:

(i) "And he is bred out of that bloody strain
That haunted us in our familiar paths:
Witness our too much memorable shame
When Cressy battle fatally was struck,
And all our princes captived, by the hand
Of that black name, Edward, Black Prince of Wales."

(ii) "Question your Grace the late ambassadors,
With what great state he heard their embassy,
How well supplied with noble counsellors,
How modest in exception, and withal
How terrible in constant revolution,
And you shall find his vanities forspent
Were but the outside of the Roman Brutus
Covering discretion with a coat of folly."

Who says this, and of whom?

3. Give the meaning of: yearn, Christom, line, humourous, strain, require, vantage, brave, bottom, rivage, likes, eche, confounded, swilled, fet, in the slips, swashers, antics, presently, discuss.

(*b*)

1. Explain:

(i) "For in evil the best condition is not to will, the second not to can."

(ii) "Imitation is a globe of precepts."

(iii) "Omnium concensu, capax Imperii, nisi imperasset."

(iv) "You shall find a bold fellow many times doe Mahomet's miracle."

(v) "Misanthropi, that make it their practice to bring men to the bough, and yet have never a tree for the purpose in their gardens as Timon had."

(vi) "Those that are first raised to nobility are commonly more virtuous but lesse innocent than their descendants."

(vii) "So good that he is good for nothing."

2. What precepts does Bacon give to men in great place? What are the chief vices of authority?

3. What distinction does Bacon make between goodness and goodness of nature?

(*c*)

1. Paraphrase the following, and explain all the allusions:

(i) "As when Alcides from Œchalia crown'd
With conquest, felt the envenom'd robe, and tore
Through pain up by the roots Thessalian pines,
And Lichas from the top of Œta threw
Into th' Euboic sea."

(ii) "But fate withstands, and to oppose th' attempt,
Medusa with Gorgonian terror guards
The ford, and of itself the water flies
All taste of living wight, as once it fled
The lip of Tantalus."

(iii) "As when a gryfon through the wilderness
With winged course o'er hill or moory dale,
Pursues the Arimaspian, who by stealth
Had from his wakeful custody purloined
The guarded gold."

(iv) "Harder beset
And more endangered, than when Argo passed
Through Bosphorus betwixt the justling rocks;
Or when Ulysses on the larboard shunned
Charybdis, and by th' other whirlpool steered."

2. Compare Milton's description of hell with that of Virgil's.

3. What classical myth does Milton borrow for his account of the origin of sin?

4. Explain Milton's use of the following: frore, starve, fields, uncouth, buxom, secrets, confine with.

(*d*)

1. Write an essay on the rise of the English drama, and give a short account of dramatists before Shakespeare.

2. Give a short sketch of Scottish poetry from Barbour to Sir David Lyndsay.

3. What did Wyatt and Surrey write, and what was their influence on English poetry?

English Language.

SWEET, ANGLO-SAXON READER, VIII. LINES 1—118; XXI. LINES 122—235.

1. How many tenses are there in an Anglo-Saxon verb? How is the future expressed?

2. Write out the present indicative and subjunctive, also the imperative of licgan, weorđan, wealdan, láetan, brecan.

3. How are the possessive pronouns formed, and how are they declined in the first, second, and third persons respectively?

4. Under what circumstances are earlier *e* and *o* changed into *i* and *u* in Anglo-Saxon, and *u* into *o*? Give illustrations.

5. Translate:

SWEET, *Anglo-Saxon Reader*, VIII. 1—14, 17—30, 106—118; XXI. 122—132, 152—158; 177—198.

Write short notes on: sámworht, VIII. l. 12; efese, l. 27; stemn, l. 43; cumpaeder, l. 77; eáca, l. 86; efenehđ, l. 117.

Parse: idesa, XXI. l. 133; leng, l. 153; onette, l. 162; áréted, l. 167; fýsen, l. 189; hlummon, l. 205; beđeahte, l. 213.

6. Translate into Anglo-Saxon:

(i) They encamped there for many weeks on the two sides of the river.

(ii) I will give you what is needful for you.

(iii) Go now to the town, and buy food for us two.

(iv) I will be a friend of thy friends and a foe of thy foes.

(v) Of the greatest good come the lesser goods, not of the less the greatest.

Latin and Greek.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Translate and decline fully: *bone, poison, ground, mouth, comb, mountain.*

2. What particles are used in asking questions? How are *utrum, an,* and *ne* respectively placed?

3. What are the rules for the sequence of tense in the subjunctive mood?

4. Translate, with marginal notes:

VIRGIL, *Aeneid,* II. 689—704.

CAESAR, *de Bell. Gall.* III. 28, 29.

5. Decline fully: ἔργος, ἐπιστήμων, λαὸς, ἀνηρ.

6. When is the infinitive used in relative clauses of indirect speech in Greek?

7. Give the third person singular and plural of the pluperfect indicative active and the imperfect subjunctive of *meto, pello, coalesco, sepelio, vincio, gradior, ulciscor.*

8. Give the principal parts of πήγνυμι, δαρθάνω, ἵκνοῦμαι, ἀλίσκομαι, ᾠδέω.

9. Turn into *oratio recta,* and translate:

Dixerunt: Sibi esse in animo sine ullo maleficio iter per provinciam facere, propterea quod aliud iter haberent nullum: rogare, ut ejus voluntate id sibi facere liceat.

Respondit: diem se ad deliberandum sumpturum: si quid vellent, ad Idus Aprilis reverterentur.

Latin and Greek.

Senior.

1. Translate and decline fully: *pecus, telluris, pecudum, porticus, tussis,* χλαμύς, σέλας, πέρας, μῆλον, γέρας.

2. After what verbs and adjectives are the supines in *-um* and *-u* used?

3. When do the conjunctions *quod* and *quia* take the subjunctive? Give examples illustrative of the difference between *quod* and *quia* with the indicative and with the subjunctive.

4. How are questions, commands, and exhortations expressed in *oratio obliqua*?

5. Give the principal usages of ἄν.

6. Give the principal rules for the use of the dative in (i) Latin, (ii) Greek.

7. Parse the following: ὥρμησεν, οἴει, φάναι, γήμας, γνῶθι, μάθω.

8. How are *quo, quominus, quin, ut,* and *ne* used?

9. Translate, and turn into *oratio recta*:

Respondit: eo sibi minus dubitationis dari, quod eas res quas legati Helvetii commemorassent, memoria teneret, atque eo gravius ferre, quo minus merito populi Romani accidissent: qui si alicujus injuriae sibi conscius fuisset, non fuisse difficile cavere; sed eo deceptum, quod neque commissum a se intellegeret, quare timeret, neque sine causa timendum putaret. Quod si veteris contumeliae oblivisci vellet, num etiam recentium injuriarum, quod eo invito iter per provinciam per vim tentassent, quod multas gentes vexassent memoriam deponere posse?

Latin.

Higher Local.

LIVY, VI.; HORACE, ODES, Bk. III.

1. What is the difference between *facinus, scelus,* and *flagitium; potentia* and *potestas; terra, tellus, humus,* and *solum; consilium* and *concilium; periculum* and *discrimen; religio, fides,* and *superstitio*?

2. Translate and explain:

(i) Diu non perlitatum tenerat dictatorem.

(ii) Adeo nihil motum ex antiquo probabile est veteribus, nisi quae usus evidenter argunt stari malunt.

(iii) Frontonis platani convulsaque marmora clamant semper et assiduo ruptae lectorae columnae.

3. Draw up a scheme of the various usages of the Latin subjunctive.

4. What is the force of the following particles? *nisi forte, quasi vero, quamquam, non quo, tanquam.* Give examples.

5. Translate, with careful notes:

HORACE, *Odes,* Bk. III. 18 to the end.

LIVY, Bk. VI. c. 14.

6. Translate:

The public piety having given me this afternoon what I rarely obtain—a short intermission of business—can I employ my leisure more agreeably than in writing to my friend? May I congratulate you and our country on your entrance on the great career of public life? If there was a time when men of spirit, sense, and virtue ought to stand forth, it is in the present. At the same time, I solemnly declare that I will not enlist under the banners of a party; —a declaration which is, I believe, useless, because no party would receive a man determined as I am to think for himself.

7. Translate (without a dictionary):

Lucus in urbe fuit media laetissimus umbra:
Quo primum jactati undis et turbine Poeni
Effodere loco signum, quod regia Juno
Monstrarat, caput acris equi; sic nam fore bello
Egregiam, et facilem victu per saecula gentem.
Hic templum Junoni ingens Sidonia Dido
Condebat, donis opulentum et numine Divae;
Aerea cui gradibus surgebant limina, nexaeque
Aere trabes, foribus cardo stridebat aenio,
Hoc primum in luco nova res oblata timorem
Lenit; hic primum Aeneas sperare salutem
Ausus, et afflictis melius confidere rebus.

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, OEDIPUS COLONEUS.

1. Parse *παρεντέτρωκται, διεσπάρακται, ἐπριάμην, πῖοι, μνήσθητι, συλλαβάς.*

2. Translate, and explain grammatical peculiarities:

(i) *εἰθ' ἦν ἐμαυτὸν προσβλέπων ἐναντίον*
στάνθ' ὡς ἐδάκρυσ' οἷα πάσχομεν κακά.

(ii) *τὰ ἀρχεῖα συνετοὶ ἄγαν ὄντες.*

(iii) *μεῖζω κολαστὴν τῶν πρὶν ἡμαρτημένων.*

3. Translate carefully:

THUCYDIDES, Bk. IV. c. 17, 18.

SOPHOCLES, *Oedipus Coloneus*, 421—444.

4. Translate:

The historian also must have some military knowledge; he must be versed in arms, machines, and in the order of war; not one who has sat at home all his days and takes everything on trust. But, above all, let his mind be entirely free; let him fear nobody and hope nothing, lest he act like a corrupt judge, who acquits or condemns with a view to his own interests; he must dread no great man nor even a whole nation; since he must think that none but fools will attribute the ill-success of affairs to him who merely relates them.

5. Translate:

(i) *ταῦτα ἐν παροιμίαις λελάληκα ὑμῖν· ἀλλ' ἔρχεται ὥρα ὅτε οὐκ ἔτι ἐν παροιμίαις λαλήσω ὑμῖν, ἀλλὰ παῤῥησίᾳ περὶ τοῦ πατρὸς ἀναγγελῶ ὑμῖν. ἐν ἐκείνῃ τῇ ἡμέρᾳ ἐν τῷ ὀνόματί μου αἰτήσεσθε· καὶ οὐ λέγω ὑμῖν ὅτι ἐγὼ ἐρωτήσω τὸν πατέρα περὶ ὑμῶν.*

(ii) *διὰ τοῦτο καὶ ἡμεῖς εὐχαριστοῦμεν τῷ θεῷ ἀδιαλείπτως, ὅτι παραλαβόντες λόγον ἀκοῆς παρ' ἡμῶν τοῦ θεοῦ, ἐδέξασθε οὐ λόγον ἀνθρώπων, ἀλλὰ (καθώς ἐστιν ἀληθῶς), λόγον θεοῦ, ὃς καὶ ἐνεργεῖται ἐν ὑμῖν τοῖς πιστεύουσιν.*

French.

Junior and Senior.

Junior work, Nos. 1—5 inclusive.

Senior work, Nos. 4—8 inclusive.

1. Translate into French:

The 14th of February, 1871.—The 12th of June is her birthday.—She will be 15 years old.—How long have you been here?—How long did your mother live in Glasgow?—The books you gave me are interesting, but I like Mary's better.—If you do not learn your lessons better, you will be punished.—Be good enough to pull down the blind.

2. How do you form the feminines of adjectives ending in *f, x, en*? Give the feminines of *blanc, sec, faux, frais, malin.*

3. Give the rules for the place of adverbs in a sentence, making two sentences as examples for each rule.

4. Give the preterite of *sentir, partir, vouloir*; the present subjunctive of *craindre, acquérir, vaincre*; the imperative of *rendre, s'asseoir, se laver.*

5. Translate: *Le Directoire,* p. 78, l. 13 to l. 24.

6. Give a list of conjunctions which require the subjunctive mood.

7. Write a short life of Madame de Staël.

8. Translate: *Le Misanthrope,* Act iii. Sc. 5, "*Arsinoé.*—Madame, l'amitié doit surtout," to "à tous vos intérêts."

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. What is the principle of the permutation of consonants? Give examples of permutation of liquids and gutterals.

2. What do you understand by *prothesis, epenthesis,* and *epithesis*? Give examples of each.

3. Translate into French:

Mary had acquired at the Hague a taste for the porcelain of China, and amused herself by forming at Hampton a vast collection of hideous images, and of vases on which houses, trees, bridges, and manderins were depicted in outrageous defiance of all the laws of perspective. The fashion—a frivolous and inelegant fashion, it must be owned—which was thus set by the amiable queen, spread fast and wide. In a few years almost every great house in the kingdom contained a museum of these grotesque baubles.

4. Translate: *Andromaque,* Act iii. Sc. 4, "*Andr.*—Où fuyez-vous?" to "qu'on veut nous l'ôter"; and *Les Plaideurs,* Act i. Sc. 6, "*Chicanneau.*—Qu'on garde la maison," to "frappons à sa porte."

5. Give, with examples, the rules for the formation of the plural of French compound nouns.

6. What is the difference between *chacun* and *chaque*? In how many ways is *quelque* used?

7. Give the primitive tenses of *tenir, essuyer, moudre, vaincre, s'en aller, mouvoir.*

German.

Junior and Senior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Ernst, Herzog von Schwaben*, p. 98, "Erhabner Kaiser," to "huldrich an."

Give the reason for the cases of *Botschaft, Statt, Schritt, Unglückseligen, Kühnheit, Scepter.*

2. Translate:

Ein Schuster war ohne sein *Verschulden* so arm *geworden*, dass ihn zuletzt nichts weiter übrig blieb, als Leder zu einem *einzigen* Paar Schuhe. Nun *schnitt* er dieselben am Abende zu, um sie am andern Morgen gleich in Arbeit nehmen zu können und legte sich getrost zu Bette. Weil er ein gutes Gewissen hatte, so *befahl* er sich dem lieben Gotte und schlief bald ein. Als er aber in Aller Frühe sich zur Arbeit niedersetzen wollte, standen die beiden Schuhe schon fertig auf dem *Tische.*

Parse the words in italics.

3. Decline with the article: *Stadt, Ei, Geld, Held, Nagel, Strauch, Thal.*

4. Distinguish between the uses of *Du, Ihr,* and *Sie* in addressing a person.

5. What are the chief uses of the subjunctive in German?

6. What cases do the following words take? *eingedenk, entbehren, erinnern, entledigen, fähig, gewahr, ähnlich, verwandt.*

7. Translate:

The Duke of Richmond had given notice of an address to the throne against the further prosecution of hostilities with America. Chatham had, during some time, absented himself from parliament, in consequence of his growing infirmities. He determined to appear in his place on this occasion, and to declare that his opinions were decidedly at variance with those of the Rockingham party.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Who was Herder? What was his great aim in literature? Shew how he tried to carry it out by means of his writings and translations. What influence had he on Goethe?

2. Translate:

Dass uns eine Hauptstadt fehle, thut zu unserer Sache gewiss nichts. Der Ausbildung des Geschmacks mag ihr Mangel ein Hinderniss sein, und auch der Geschmack kann durch sie eben so wohl verderbt und gefesselt werden, als sie ihm anfangs Politur, und Flügel werleihen mochte. Einsichten aber, ruhige Ueberlegungen, thätige Versuche, Empfindungen und Ausserungen dessen was örtlich und allenthalben zu unserm Erieden dienet, sie verschmähen die Mauern einer Haupstadt, und suchen das freie Land ihre Werkstätte ist das gesammte Deutschland. HERDER.

3. Who were Hamann and Jacobi?

4. What is meant by *Sturm und Drang*? What effect had the French Revolution on the young writers of Germany?

5. Classify the German pronouns. How does the present declension of the demonstrative pronoun differ in the genitive from that of the article? Which is the older form? What case is *dero*?

Explain the forms *daran* and *wovon*.

6. Explain what is meant by Old, Middle, and New High German. Which German dialect had most influence in forming the literary language?

7. Translate:

Being now resolved to be a poet, I saw everything with a new purpose, my sphere of attention was suddenly magnified, no kind of knowledge was to be overlooked. I ranged mountains and deserts for images and resemblances, and pictured upon my mind every tree, fruit, and flower of the valley. I observed with equal care the crags of the rock and the pinnacles of the palace. —RASSELAS.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Reduce 16 tons 4 cwt. 3 qrs. 15 lb. 13 oz. to ounces; also 13 mls. 5 fur. 9 pls. 3 yds. to inches.

2. A sum of £10465 was divided between two persons so that one had £547 10*s.* more than the other. What did each receive?

3. Divide, using short division, 8015473 by 66. Explain how the remainder is found.

4. A certain book cost $7\frac{3}{4}d.$ per copy for paper, $4\frac{1}{2}d.$ for printing, $5\frac{1}{2}d.$ for binding. The total issue cost £110 18*s.* 9*d.* Of how many copies did it consist, and what was the profit on the whole issue if each copy sold for 2*s.*?

5. An exact number of shares, all at the same price, was bought with each of the following sums: £87 6*s.* 3*d.*, £134 18*s.* 9*d.*, £341 6*s.* 3*d.* Find the highest possible price of each share.

6. Simplify: (i) $\frac{3}{4}+\frac{5}{7}+1\frac{5}{8}+2\frac{1}{8}$;
(ii) $8\frac{1}{2}-5\frac{7}{10}$;
(iii) $9\frac{3}{7}\times 3\frac{2}{11}$;
(iv) $6\frac{1}{3}\div 9\frac{1}{7}$;
(v) $\dfrac{1}{1+\dfrac{7}{6\frac{2}{3}}}+\dfrac{7}{13\frac{2}{3}}$.

7. If a man row at the rate of 7 miles an hour with the stream, whose rate is $2\frac{1}{2}$ miles, how fast will he row against it?

8. If it cost £18 5*s.* 9*d.* to carpet a room 22 ft. long and 19 ft. wide, how much will it cost for a room 27 ft. by 16 ft.

9. Simplify: (i) $\cdot0025+200+\cdot074+523\cdot1424$;
(ii) $9\cdot567-3\cdot078$;
(iii) $\cdot0075\times13\cdot75$;
(iv) $\cdot015713\times\cdot1813$.

10. If 3 men and 4 women can do a piece of work in 56 days, in what time can it be done by 1 man and 1 woman working together, supposing that a woman will be able to do $\frac{5}{6}$ of a man's work.

11. A reservoir is 24 ft. 8 in. long and 12 ft. 9 in. wide. How many cubic feet of water must be drawn off to make the surface sink 1 ft.?

12. Find the G. C. M. of 64·09 and 7·395, and the L. C. M. of 98, 35, 77, 121. Explain fully your working in each case.

13. A person standing on a railway platform noticed that a train took 21 seconds to pass completely through the station, which was 88 yards long, and that it was 9 seconds passing him. How long was the train, and at what rate per hour was it travelling?

14. A hall is 58·99 ft. long and 27·066 ft. wide, and is to be completely paved with equal square tiles. What is the exact size of the largest tile that can be used?

15. *A* owes me the following sums: £480, due in $3\frac{1}{2}$ months; £607, due in 2 months; £577 15*s.*, due in 5 months. What sum shall I accept as a single payment at the end of 6 mths., reckoning interest at 4 per cent.?

16. How must a number be altered to double its reciprocal?

ANSWERS TO *NOVEMBER* PAPER.

1. 476926. 2. 60 tons 18 cwt. 3 qrs. 3 oz. 3. £90 16*s.* $9\frac{13}{165}d.$
4. $1\frac{61}{1225}$. 5. *A*, £212 2*s.*; *B*, 353 10*s.*; *C*, £388 17*s.*
6. ·0000128; 5. 7. £403 13*s.* $8\frac{9}{17}d.$ 8. $1\frac{79}{128}$; $\frac{65}{128}$.
9. £1660 15*s.* $0\frac{3}{4}d.$ 10. (i) $\frac{33}{50}$; (ii) $25\frac{10}{11}$; (iii) $1\frac{13}{15}$; (iv) 6400.
11. £775. 12. £3 19*s.* $2\frac{3}{5}d.$ 13. 857 mls. 96 yds. 2 ft.; 5 lb. 7 oz. 19 gr.
14. $8\frac{13}{15}$. 15. $5\frac{1}{25}$ lb.; 292 days; ·034375 tons; ·23125 oz. Troy.
16. (i) the sum is unaltered; (ii) the difference is increased or diminished by twice the quantity, according as the greater of the two is increased or diminished.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Enunciate the propositions in Book I. which demonstrate the cases of the equality of triangles.

If two triangles have their three sides equal they are equal in every respect.

If two triangles have their three angles equal, each to each, are they equal in every respect? Prove your answer.

2. If a side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles; and the three interior angles of every triangle are together equal to two right angles.

What is the angle of a regular octagon?

3. If one angle of a triangle be equal to the sum of the other two, the triangle can be divided into two isosceles triangles.

4. If the square described on one of the sides of a triangle be equal to the squares described on the other two sides of it, the angle contained by these two sides is a right angle.

5. From the angles at the base of a triangle perpendiculars are drawn to the opposite sides produced if necessary; shew that the straight line joining the points of intersection will be bisected by a perpendicular drawn to it from the middle point of the base.

6. Divide a given straight line into two parts so that the rectangle contained by the whole and one of the parts may equal the square on the other.

7. Divide a given straight line into two parts such that the square on one of them may be double the square on the other.

8. Draw a straight line which shall touch a given circle, and make with a given line an angle equal to a given angle.

9. On a given straight line describe a segment of a circle containing an angle equal to a given rectilineal angle.

10. Describe an isosceles triangle having each of the angles of the base double of the third angle.

11. If four straight lines be proportionals, the rectangle contained by the extremes equals the rectangle contained by the means; and if the rectangle contained by the extremes equal that contained by the means, the four straight lines are proportionals.

12. Through a given point either without or within a given circle, draw a straight line, the part of which intercepted by the circle shall be equal to a given line not greater than the diameter of the circle.

13. If a straight line fall on two parallel straight lines it makes the alternate angles equal to one another, and the exterior angle equal to the interior and opposite angle on the same side; and also the two interior angles on the same side together equal to two right angles.

14. Draw through a given point, between two straight lines not parallel, a straight line which shall be bisected in that point.

15. If a straight line be divided into two equal and also into two unequal parts the rectangle contained by the unequal parts together with the square on the line between the points of section, is equal to the square on half the line.

16. From two given points draw two equal straight lines which shall meet in the same point of a line given in position.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—6 inclusive.
Senior work Nos. 4—10 inclusive.
Higher Local work Nos. 6—12 inclusive.

1. Find the G.C.M. of $2x^3+(2a+3b)x^2+(2b+3ab)x+3b^2$ and $2x^2+(2c+3b)x+3bc$.

Find the L.C.M. of $6x^3-4x^2+5x-3$ and $9x^3-9x^2+5x-2$.

2. From $x(b-c)+y(c-a)+z(a-b)=0$, shew that

$$\frac{cx-ay}{c-a}=\frac{bz-cy}{b-c}=\frac{az-bx}{a-b}.$$

3. Simplify:

(i) $\dfrac{3\sqrt{2}}{\sqrt{3}+\sqrt{6}}-\dfrac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}+\dfrac{\sqrt{6}}{\sqrt{2}+\sqrt{3}}$;

(ii) $\sqrt{(27+\sqrt{3})}$.

4. Solve the equations:

(i) $\sqrt{(x+d-c)}=\sqrt{d}+\sqrt{c}-\sqrt{x}$;

(ii) $x^3+y^3-3xyz+z^3=0$, $x-y=a-b$, $x-z=a-c$.

5. If c be the harmonic mean between a and b, find the value of $\dfrac{1}{c-a}+\dfrac{1}{c-b}$ in terms of a and b.

6. Prove that 441 is a perfect square in any scale whose radix is greater than four.

7. Distinguish between permutations and combinations. Shew how to find the number of permutations of n things taken r at a time.

8. If $y \propto$ the sum of two quantities, one of which varies as x^2 and the other as x^4, find the value of y in terms of x^2 and x^4.

9. A bag contains shillings, florins, and half-crowns, and the money value of the different numbers of each coin is the same. There are 114 coins in the bag. Find the number of shillings, florins, and half-crowns respectively.

10. Enunciate the binomial theorem, and prove it for a positive fractional exponent.

11. If the number of permutations of n things taken r at a time is equal to 10 times the number of permutations of n things taken $r-1$ at a time, find r.

12. Find the number of years in which £1 will amount to £100 at 10 per cent. compound interest.

ANSWERS TO *NOVEMBER* PAPER.

1. $\dfrac{(3x-5y+7z)(x-y+z)}{3x-3y-7z}$;

$$a^4 - a^{\frac{7}{2}}b^{\frac{1}{2}} + a^3b^{\frac{3}{2}} - a^{\frac{5}{2}}b + a^2b^{\frac{4}{3}} - a^{\frac{3}{2}}b^{\frac{5}{3}} + ab^2 - a^{\frac{1}{2}}b^{\frac{7}{3}} + b^{\frac{5}{3}}.$$

2. $\frac{6}{5}x^{\frac{11}{6}} - a^{\frac{1}{3}}x^{\frac{2}{3}} + \frac{3}{2}x^{\frac{3}{2}}a^{\frac{1}{3}} - a^{\frac{1}{3}}x^{\frac{5}{6}} + \frac{5}{36}a$.

3. (i) abc^2; (ii) 0.

4. (i) $x=131, y=31$; (ii) $x=6, y=14$; (iii) $x=1$ or -7;

(iv) $x=5$ or -8 or $-\dfrac{3+\sqrt{221}}{2}$.

5. $\dfrac{a^3+b^3+2a^2-2ab-b^2}{(a+b)(a+b-1)}$. 6. $\dfrac{\lfloor 13}{\overline{16}}$.

7. $1-21x+189x^2-945x^3+2835x^4$; $3240 \cdot 2^7x^5$. 8. $n=\frac{1}{2}$ or $\frac{1}{3}$.

11. 123113; 4785. 12. 16, 28, 49.

13. $\dfrac{\lfloor 64}{\underline{\lfloor 32}\,\overline{\lfloor 32}} \times \dfrac{\lfloor 72}{\underline{\lfloor 46}\,\overline{\lfloor 26}}$.

15. 96. 18. 1563531043; 17·2.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Find the value of $\sin\theta$, $\cos\theta$, $\tan\theta$ in terms of m from the equation $\tan\theta + \cot\theta = m$.

2. Find an expression for the tangent of half an angle of a triangle in terms of the sides of the triangle.

3. Prove the following formulæ:

(i) $\text{vers}(-A) = \text{vers}\, A$; (ii) $\cot(180° - A) = -\cot A$;

(iii) $\sin(90° + A) = \cos A$; (iv) $\cos(90° - A) = \sin A$.

4. Find the value of $\cot 7\frac{1}{2}°$ and of $\tan 427\frac{1}{2}°$, and the sine and cosine of $22\frac{1}{2}°$.

5. Prove that all the angles whose tangent is equal to $\tan A$ are included in the formula $n.180° + A$.

6. Determine the limits between which A must lie in order that $2\sin A = -\sqrt{(1+\sin 2A)} - \sqrt{(1-\sin 2A)}$.

7. Prove the parallelogram of forces both for the magnitude and direction of the resultant.

8. Shew how to graduate the Danish steel-yard in which the fulcrum is moveable.

9. Find the force necessary to support a weight of 46 lb. upon a plane inclined at an angle of 45° to the horizon, the force acting horizontally.

10. If s be the space described from rest in the time t by a particle under the action of an uniform accelerating force f, then $s = \frac{1}{2}ft^2$.

11. Prove that the path of a projectile in space is a parabola. A body is projected upwards with a velocity of 12 feet per second upon a plane inclined at an angle of 45° to the horizon. Find how high it will ascend and the time which elapses before it returns to the starting point.

12. A body is projected upwards with a velocity of 140 feet per second. Find the velocity with which it will pass a point 3 feet from the ground, the height to which the body will rise, and the position of the body when it is descending with a velocity of 150 feet per second.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. Prove that every system of heavy particles has one and only one centre of gravity. Having given the centre of gravity of a body, and also that of a part of the body, shew how to find the centre of gravity of the remaining part.

2. Prove the parallelogram of forces both for the magnitude and direction of the resultant of the forces, and extend the proof to the case of incommensurable forces.

3. Find the force necessary to support a body of 2200 lb. weight on a screw, the thread of which makes 110 turns in the course of 14 inches, and which is acted upon by an arm 5 feet in length.

4. A rod of 9 feet in length is hung, by means of a string 12 feet in length attached to its ends, over a small smooth fixed peg, so that the string is divided into two parts in the ratio of 5 to 6. Find the pressure on the peg and the position of the centre of gravity of the rod.

5. An uniform beam of length 54 feet rests against a vertical plane, and over a peg at a distance of 8 feet from the plane. Find the inclination of the beam to the vertical plane.

6. If s be the space described from rest in the time t by a particle under the action of an uniform accelerating force f, prove that $s = \frac{1}{2}ft^2$.

7. Prove that the path of a projectile in space is a parabola. A body is projected with a velocity of 120 feet per second. Find the position of the directrix.

8. A weight of 7 lb. resting upon a plane inclined at an angle of 45° to the horizon is drawn up by means of an equal weight hanging freely connected with it by a fine string, which passes over a small pulley at the top of the plane. Find the tension of the string.

9. If the area of a 40-acre field be represented by 900 and the acceleration of a heavy falling particle by 88, find the units of time and length.

10. Describe accurately the causes to which the succession of the seasons is due.

11. Describe the method of determining the longitude of a ship at sea by means of lunar distances.

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. The number of degrees in an angle is equal to the ratio of the number of grades in it to its circular measure. Express the magnitude of the angle in degrees, grades, and circular measure.

2. The cosine of an angle is $\frac{\sqrt{3}}{2}$. Determine all the other trigonometrical ratios, and explain the reason why the tangent when determined from the cosine has two values.

3. Prove that the logarithm of a product is equal to the sum of the logarithms of its factors.

4. Shew that $\cot\{\theta + \tan^{-1}(\tan^3\theta)\} = 2\cot\theta$.

5. Prove that $\sin\theta > \theta - \frac{\theta^3}{4}$, θ being the circular measure of a positive angle less than a right angle.

6. Find the radii of the inscribed and circumscribed circles of a regular polygon, that is of a polygon which has all its sides equal and all its angles equal.

7. If PN be the ordinate of any point P on a hyperbola, A and B extremities of the major and minor axes respectively, and C the centre, prove that $PN^2 : AN : A'N :: BC^2 : AC^2$.

8. If from a point O a pair of tangents OQ, OQ' be drawn to a parabola, and OV be drawn parallel to the axis meeting the parabola in P and QQ' in V, then the tangent at P will be parallel to QQ', and OV will be bisected at P.

9. Shew how to determine the point on a parabola whose sub-tangent is equal to its sub-normal.

10. Find the area of the triangle whose angular points are 1, 0; 2, 3; 4, 1; and of the quadrilateral whose angular points are 1, 5; 4, 2; 3, 6; 0, 3.

11. Find the equation to the tangent to a parabola in terms of the tangent of the angle it makes with the axis.

12. The distance between the foci of a hyperbola is $2a$, and the eccentricity is $\frac{1}{\sqrt{2}}$. Determine the axes, and find the equation to the curve referred to them.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. How is coal gas produced? What are its constituents?

2. What is an amalgam and an alloy? State the constituents of brass, bronze, pewter, and galvanised iron.

3. Give the chemical symbols for blende, galena, tin-stone, iron pyrites, glauber salts, and nitre.

(*b*)

4. What is formed (i) when magnesium wire is burnt, (ii) when iron is left in a damp place, (iii) when hydrochloric acid is poured on chalk, (iv) when water is poured on lime? Give equations.

5. By what tests would you distinguish nitrous oxide gas from oxygen?

(*c*)

6. Explain a method for determining the specific gravity (i) of solids, (ii) of liquids. If a piece of wood of specific gravity ·8 float in a liquid of specific gravity ·9, how much of the wood will be immersed?

7. Describe the action of the common siphon.

8. If a stone, thrown into a well, strikes the bottom in three seconds, what is the depth of the well?

(*d*)

9. Describe the calibration, filling, and graduating of a mercurial thermometer.

10. Give the boiling point, blood heat, and freezing point in the Fahrenheit, Centigrade, and Reaumur scale of the thermometer. What is 16° F. in the Centigrade and Reaumur scale?

11. Are polished metals good or bad absorbers and radiators of heat? Give examples.

(*e*)

12. State Ohm's Law.

Upon what does the amount of resistance in the wire conveying an electric current depend?

13. Distinguish between frictional and voltaic electricity.

Science.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. Describe in detail the structure of an open fibro-vascular bundle.

2. Describe fully the flower and leaf of geranium and chrysanthemum, and refer the plants to their natural order.

3. Given the leaf of a vascular plant, what might you infer of the general structure of the plant ?

4. Give some account, by reference to examples, of the different ways in which cross-fertilisation is effected in plants.

(*b*)

1. Describe the structure and life-history of vorticellæ.

2. Refer the following to their places in the animal kingdom, stating your reasons in each case : nautilus, rabbit, canary, cat, sturgeon, shark.

3. Compare, with the aid of diagrams, the structure of a typical vertebrate and a typical invertebrate.

(*c*)

1. What is the wind bringing most rain to Great Britain, and why is it so ?

2. Mention the chief varieties of mineral springs. How do they probably become charged with mineral matter ?

3. Explain the occurrence of beds of rock salt ? In what formation do they occur in England ?

4. Give a short account of the formations of the secondary or mesozoic period, and mention the most characteristic forms of the life of that period as shewn by fossils.

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. Define the terms *acid, base, alkali.* Represent, in chemical symbols, the action of hydrochloric acid on zinc, and that of nitric acid on sodic hydrate, explaining what change is effected.

2. How much hydrogen can you obtain from hydrochloric acid by the use of six grammes of zinc?

How much sodium chloride, and how much calcium chloride would be required to precipitate all the silver from silver nitrate?

3. Account for the pressure of the atmosphere being generally imperceptible. Being so, how would you prove its existence?

4. Explain the conditions necessary for a siphon to act. Will a siphon act if the shorter leg be inserted into a closed vessel?

5. Describe, with diagrams (from Nature, if possible), longitudinal and transverse sections through the rhizome of the fern.

6. Give a detailed description of the sexual generations of a fern, and compare the plant with mucor.

(*b*)

1. What is the relation between the density of an element and its atomic weight? How can you calculate the density of a compound gas from its molecular weight?

2. How may nitrogen be prepared? Enumerate its compounds with oxygen, giving their symbols and names. Of what acids is it a constituent?

What are the properties of nitrous oxide?

3. Describe the preparation of a compound of nitrogen with hydrogen. How may its composition be proved?

4. In what forms does carbon occur in Nature? How does charcoal act as a disinfectant? How is carbon monoxide prepared? Give the symbols, and compare the properties of marsh gas and olefiant gas.

(*c*)

1. Find the greatest length available for the shorter leg of a siphon used for drawing off water, when the barometer is at 30 inches.

2. Account for trade winds, monsoons, simoons, and siroccos. Quote Dove's law of the notation of the winds.

3. Describe the different kinds of clouds. Account for their formation and their suspension in the atmosphere.

4. How is rain caused? Describe a rain gauge. Account for the difference if the rain-fall be measured at a height or on the surface of the earth.

(*d*)

1. Classify, and explain the structure of the well-known succulent fruits.

2. What elements are found in the parenchyma cell of a leaf, and what are their chief organic compounds?

3. Give an account of the principal modes of cell-formation.

4. In what way is the activity of intracellular protoplasm manifested?

(*e*)

1. Briefly describe the structure and habits of pectinaria, spirorbis, and terebella, and refer them to their places in the animal kingdom.

2. Describe the structure of a sea-cucumber, and contrast it with that of the common star-fish.

3. What are the characteristics which distinguish vertebrates from invertebrates?

4. Describe and contrast the shoulder-girdle and sternum of (i) a frog, (ii) a bird, and (iii) a typical lizard.

(*f*)

1. What various sections are comprised in the alimentary canal? Contrast their functions, and point out their most marked characteristics adapting them to these functions.

2. Shew, with diagrams, the structure of the pancreas. Why are we justified in calling it "the abdominal salivary gland"?

3. Describe an experiment shewing the action of gastric juice upon proteids. To what constituents of gastric juice is this action due? How does gastric juice behave with regard to the other food-stuffs?

(*g*)

1. Give an account of the circulation of watery vapour in the atmosphere, and of its causes. Mention areas of periodical and variable rains, and rainless districts, with explanations.

2. Assign to their sub-kingdoms and classes: lingulella, graptolites, phacops, lepedodendron, productus, and pentamerus. Give approximately their ranges in geological time.

3. Compare the carboniferous formation as it occurs in England and Scotland. Is it separated from the rock, above and below, by limiting unconformities? Draw sections illustrating this.

4. Describe gabbro, syenite, and gneiss. Do you regard them as eruptive, trappean, or metamorphic rocks?

Logic.

Higher Local.

1. Explain and give examples of (i) the sorites, (ii) an enthymeme, (iii) a prosyllogism, (iv) an episyllogism, (v) an epicheirema.

2. What is the difference between an argument of the *modus ponens*, and one of the *modus tollens*?

Examine the validity of the following arguments:

(i) If the English were convinced that all the social evils existing in Ireland were caused by misgovernment, it might be possible to remedy those evils; but the English will not believe that the evils are the result of misgovernment, therefore it is impossible to remedy them.

(ii) A fine summer causes much prosperity to watering-places. During the summer of 18— the watering places were very prosperous, therefore that summer was fine.

3. Explain (i) the simple constructive dilemma, (ii) the complex constructive dilemma, (iii) the destructive dilemma; and give examples, not using letters merely, of each.

4. Define a fallacy, and point out the distinction between logical and material fallacies.

5. Give examples of *ignoratio elenchi, petitio principii, non sequitur.*

Classify the following incorrect arguments, showing in each case in what the fallacy consists:

(i) The glory of the victory of Agincourt was rightly given to the King, Henry V., for the night before the battle he spent in encouraging his soldiers, and in trying to inspire them with heroism and patriotism.

(ii) The policy of free trade is an economical policy; but merchants *A*, *B*, and *C*, uphold the doctrine of protection, therefore their policy is not economical.

(iii) Government is bound to protect the weak: Mr. *A.*, though he has recovered from his illness, is still weak, therefore Government is bound to protect him.

French History.

(*a*) GENERAL, 1314—1347; (*b*) SPECIAL, 1675—1678.

(*a*)

1. Give the history of the rise and fall of the Order of Knights Templars.

2. Shew, by means of a genealogical table, the descent of Philip of Valois and of Edward III. of England from Philip III. Examine the claim of Edward III. to the French crown.

3. Contrast the internal condition of France and England at the beginning of the Hundred Years' War.

4. "The king of England bought his Flemish alliances at a high rate, and they were worth little or nothing to him." Examine this statement.

5. Give an account of the disputed succession in Brittany, and trace its influence in the struggle between France and England.

(*b*)

6. Sketch the career of Turenne, and trace as clearly as you can the disasters which resulted from his death.

7. What was the political significance of the marriage of William of Orange with the Princess Mary of England? What were the results as far as regards the relations between France and England?

8. What exactly were the terms of the Treaty of Nimeguen? How do you account for the long delay in concluding this treaty?

Music.

Junior and Senior.

Sight paper, to be done without preparation. Time allowed—2 hours.

1. Why do the alto and tenor staves differ in pitch, although the same clef is used for each? How much higher in pitch is the C clef than the F clef, and the G clef than the C clef?

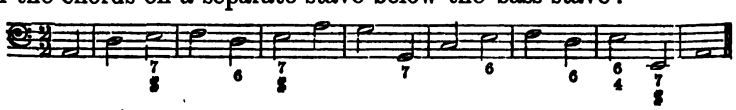
2. Write one octave ascending and descending of the major scale, and different forms of minor scale, of F sharp; also of the relative minor of the one and the relative major of the other.

3. Write one octave ascending and descending of the chromatic scales of E flat and B flat.

4. Give two examples of each of the following intervals, and say what each becomes by inversion: augmented second, minor sixth, diminished third, major fourth, minor seventh, augmented fifth, diminished seventh, minor third.

5. Define the following terms: *chord, concord, discord, cadence, inversion, signature, bar, turn, shake, appoggiatura, acciacatura, score, accidental, triplet, slur, bind, accent.*

6. Add treble, alto, and tenor parts to the following figured bass. Write the exercise in vocal score, and give the ground-notes of the chords on a separate stave below the bass stave:



7. Give the names and (if you can) the dates of six very great composers.

8. Give a short account of the life (and names of the principal works) of Handel, Beethoven, or Mendelssohn.

NOTE.—Juniors omit Question 8, and Seniors omit Question 7.

Music.

Higher Local.

1. Add treble, alto, and tenor parts to figured basses Nos. 73 and 75 in Macfarren's progressive exercises.

2. Write three exercises of three-part counterpoint to each of the *canti fermi* given in last month's paper, and place them in a different part in each exercise.

3. Give a detailed analysis of the first movement of Haydn's Pianoforte Sonata in E flat [Peters' Edition (148), No. 1].

Refer to the number of bars reckoned from the beginning, and point out all the modulations that occur, as well as analysing the form.

4. (i) What are couplers? What do you consider to be the merits and demerits of radiating and straight pedals?

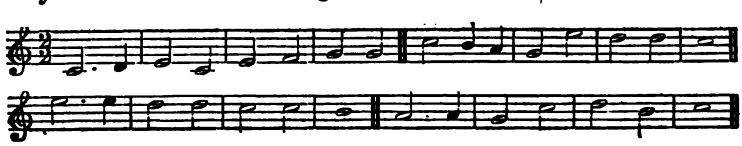
(ii) How would you proceed to cure a break in a voice that you were training?

(iii) Give three fingerings of the chromatic scale, and state your opinion as to their relative usefulness.

NOTE.—Answer only one section of Question 4.

5. Write an essay on "Church Music—Past and Present."

6. Harmonise the following melody in four parts *without the aid of an instrument*, and figure the bass:



Teachers' Examination.

The Theory, History, and Practice of Education.

Special Subjects: *The Life and Work of Pestalozzi; Milton's Tractate on Education.*

1. Studies have been divided into Permanent and Progressive, and again into Knowledge and Art subjects. They may also be classed with regard to the mental faculty they specially cultivate. Discuss these classifications, and criticise the following table, which has been suggested as a specimen of a method of arriving at some definite conclusions with regard to educational values:

Studies.	Per	Pro	K	A	M	I	O	C	J
Geography		Pro	K		M	I			
Arithmetic	Per			A					J
Zoology		Pro	K				O	C	
Grammar	Per			A				C	J
History		Pro	K		M	I			
Latin	Per			A	M				J
Chemistry		Pro	K		M		O		
Natural Philosophy	Per			A					J

Per = Permanent; Pro = Progressive; K = Knowledge; A = Art; M = Memory; I = Imagination; O = Observation; C = Classification; J = Judgment.

2. What are the chief educational writings of Pestalozzi? Give an account of one of these.

3. What are the essential points to be observed in arranging a school-room? Describe a model class-room for twenty-five pupils, explaining its merits. What furniture and apparatus would you supply?

4. Prepare a time-table of school work and a time-table of home work for a girl of 12.

GENERAL EXAMINATION PAPERS FOR CHILDREN.

For directions for those who send their papers to the Examiners for correction, see fly-leaf at end.

English History.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—16 „ „ 1—10 „

1. Name the races who ruled in England previous to the Norman Conquest, and give a short account of one ruler of each race.

2. Account for William Duke of Normandy becoming king of England. Mention any changes which were the result of a foreign rule.

3. Give the date of the Constitutions of Clarendon, and as fully as possible the details of the struggle which caused the drawing up of those enactments.

4. Give a short account of the struggles of the National party under Simon de Montfort, with dates of the chief events you mention.

5. Give the dates of the sovereigns from Stephen to James I.; of the passing of Magna Charta, Provisions of Oxford, Treaty of Troyes, Petition of Right, Habeas Corpus Act, Triennial Bill, Riot Act, Reform Bill; of the battles of Senlac, Bouvines, Poitiers, Agincourt, Barnet, Naseby, Blenheim, Waterloo.

6. On what excuse did Edward III. make war with France? Name the chief engagements in that war, with their dates, and shew by a genealogical table the foundation of the claim on which it rested.

7. Describe the course of the French wars of Henry V. and Henry VI.

8. State briefly what you know of Lanfranc, Godfrey de Bouillon, Strongbow, Robert Bruce, John Duke of Bedford, Warwick the King-maker, Sir Walter Raleigh, Hampden, Cromwell, Monk, Marlborough, Walpole, Clive, and Pitt.

9. When did the separation of the English Church from Rome (i) in name, (ii) in reality, take place? When was the union between England and Scotland completed? Shew the feeling of the nation with regard to both measures.

10. Describe the risings of 1715 and 1745 in favour of the Pretender.

Geography.

EUROPE AND AFRICA.

Ages 10—12 work Nos. 1—6 inclusive, also 10.
„ 12—16 „ „ 1—10 „

1. Explain the terms: isthmus, peninsula, fiord, lough, nyanza, plateau, rapid, simoon, trade wind, islet.

2. Give the positions of the chief coal fields of England and Wales, noting the industries which flourish in their localities.

3. In an outline map of England and Wales insert from memory the chief mountains and rivers, also eighteen towns.

4. Name the maritime countries of Europe, stating which sea or seas they respectively border, and give the capital of each country you name.

5. Describe as fully as possible the physical features of Switzerland, and name as many Swiss cantons as you can.

6. Enumerate all the mountain chains of Europe which are in no wise connected with the Alpine system.

7. Name and describe the course of the chief rivers of Africa. Draw a map of the Nile and its tributaries.

8. Name the States of southern Africa. Give their limits, physical features, chief towns, and chief imports.

9. Give a list of the islands off the coasts of Europe and Africa, stating to whom they belong.

10. Where are Timbuctoo, Zanzibar, Jamaica, Madeira, Oporto, Madras, Cairo, Montreal, Florence, Archangel, Sydney, Philadelphia, Valparaiso, Sarawak, Antananarivo?

Grammar.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—16 „ „ 1—10 „

1. Why do words need to be classified into parts of speech? Why should some be inflected and others not inflected?

2. Give instances with examples of the same word being used as two or more parts of speech.

3. Quote ten or eleven lines of poetry and underline every noun, and with a double line every verb in the passage.

4. Define the terms: relative pronoun, personal pronoun, first, second, and third person, singular number, objective case.

5. Distinguish between the strong and weak conjugation of verbs. Classify the following, and give their past tense and past participle: write, accuse, think, make, sing, tell, have, hold, do, seek, lie, lay, receive, think, stop. Of what kind are the verbs: be, become, shall, may, and would?

6. Parse:

"'Tis distance lends enchantment to the view
And clothes the mountain in its azure hue."

7. Give three examples of simple, compound, and complex sentences.

8. Enumerate and give examples of different kinds of subordinate sentences.

9. Analyse:

(i) "All places that the eye of heaven visits
Are to a wise man ports and happy havens.
Teach thy necessity to reason thus:
There is no virtue like necessity."

(ii) "This above all: to thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man."

10. Write an essay on "The proper study of mankind is man," or on Tennyson.

Latin.

Ages 10—12 work Nos. 1—5 inclusive.
„ 12—16 „ „ 5—10 „

1. Decline: *terra firma, scuta longa, timidus lepus,* and *longum iter.*

2. Give the genitive singular and plural of *via, vinum, navis, origo, carmen, rete, opus, divitiae, nox, nix.*

3. Give rules for the declension of adjectives. Could you in all cases, knowing the nominative for all genders of an adjective, say like which declension it is declined?

4. Translate: We are.—You will be.—They have been.—He had been.—They must be.—Thou wilt have been.—I may have been.—You were loving.—They will advise.—He loved.—We have advised.—We may have loved.—They might have advised.—Do not advise.—To have loved.

5. Translate:

Pisces nant.—Pueri ludos ludent.—Magistri libros legerunt.—Discipulus laborem finiverat.—Muri urbem cingunt.—Feminae epistolas scripserant.—Turpe est leges violare.—Agricolarum est semina spargere.—Milites castra fossa muniverunt.—Ne delete urbem milites.

6. Decline: *hic magister sapiens, duo dona, immortalis deus.*

7. Give the short conjugation of *condo, abdo, peto, curo, cresco, veho, vinco, vincio, gigno, cado, canto, sterno, debeo, loquor, queror.*

8. Give the future simple and perfect indicative and the present and pluperfect subjunctive of *vastor, ducor, partior, nolo, fero.*

9. Translate:

(i) Hinc Consules *coepere* pro uno rege duo *hac* causa *creari ut,* si unus malus esse *voluisset,* alter *eum,* habens potestatem similem, coercerat.

(ii) Venit olim quidam ad Aristippum philosophum *eique* dixit: "Visne filium meum artes tuas docere." Respondit Aristippus: "Hoc equidem faciam, acceptis duobus *talentes.*" Pater autem *pretio* exterritus dixit: "At servum minoris emere possum." Contra Aristippus: "*Fac* hocce; ita duos servos habebis."

10. Parse the words in italics in 9.

French.

Ages 8—10 work Nos. 1—4 inclusive.
„ 10—12 „ „ 4—9 „
„ 12—14 „ „ 8—12 „
„ 14—16 „ No. 13, and Junior and Senior Paper, Nos. 2, 3, 4, 6.

1. Give, with examples, all the exceptions to the general rule for the formation of the plural of French nouns.

2. Write out the preterite and future tenses of any regular verb of the first, and the present indicative and present subjunctive of any verb of the second conjugation.

3. Write down the cardinal numbers from 18 to 35, and the ordinal numbers from 9th to 21st.

4. Give the names of the days of the week, and of the months.

5. Translate:

Did you send that pretty doll to our neighbour's little daughter? —Those children are too idle; they have not written their exercises.—This large tree and these flowers belong to the doctor's brother.—We have put many apples on your table.—Where did you find that large pen-knife? I have lost mine in the street.

6. How do you translate *some* or *any* (i) before a noun; (ii) before an adjective? Give examples.

7. Translate:

Elles nous ont donné un panier de framboises.—Voulez-vous un peu plus de viande?—Ma mère et ma petite sœur sont venues me voir ce matin.—A qui sont ces boucles d'oreilles?—Je pense qu'elles sont à votre cousine, qui est partie pour Londres.

8. How do you translate *which* when it is an adjective and when it is a pronoun? Give examples.

9. Translate:

L'un des plus fameux ouvrages de Sémiramis, à Babylone, fut la construction de magnifiques terrasses couvertés d'une riche

verdure, que les anciens appelaient des jardins suspendus. On arrivait par de superbes escaliers à ces jardins, où les plus belles fleurs et les meilleurs fruits se présentaient en abondance, comme dans un nouveau paradis terrestre.

10. Give the present indicative of *faire, bouillir, boire, recevoir, paraître;* the future of *rendre, cueillir;* the imperfect indicative and subjunctive of *aller, vouloir, obéir.*

11. In how many ways is it possible to avoid the use of the passive voice in French? Give examples.

12. Translate:

Je tenais un hanneton sous un verre *renversé.* L'animal grimpait *péniblement* les parois pour retomber bientôt, et recommencer sans cesse et sans fin. Quelquefois il retombait sur le dos; c'est, vous *le* savez, pour un hanneton un très-grand malheur. Avant de *lui* porter secours, je contemplais sa longanimité à *promener* lentement ses six bras par l'espace, dans l'espoir toujours *déçu* de s'accrocher à un corps qui n'y est pas.

Parse the words in italics.

13. Translate into French:

We had been walking together for some time when he suddenly stopped short, and declared that he must return home instantly to write an important letter which he had forgotten until that moment. I was very sorry, but I made up my mind to go back with him, for I feared he would miss his way.

German.

Ages 10—12 work Nos. 1—5 inclusive.
„ 12—14 „ „ 3—8 „
„ 14—16 „ „ Junior Paper, Page 448.

1. Decline: *der Mann, die Frau, das Kind, der Tisch, das Fenster.*

2. Decline: *Deine kleine Schwester, Dieser helle Stern, Ein halbes Glas, das schwarze Pferd.*

3. Write out the

(i) Imperfect indicative of *schreiben, stehen, gehen.*

(ii) Past participle of *steigen, fahren, brennen.*

(iii) Perfect passive of *schlagen, loben, strafen.*

4. Give the German for the numerals from 1 to 10, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{7}{8}$, 1882.

5. Translate:

(i) Where are the beautiful roses? Have I not given them back to you? They are in the next room. Why did you put them there? I have put them in water.

(ii) Will you go to the woods with me? Yes, gladly; when shall we go? Let us start at once.

6. Translate:

Vor seinem *Heergefolge ritt*
Der kühne Held Harald;
Sie *zogen* in des Mondes Schein
Durch einen wilden Wald.
Sie tragen manch erkämpfte Fahn'.
Die hoch im Winde *wallt,*
Sie singen manches Siegeslied,
Das durch die *Berge hallt.*

Parse the words in italics.

7. What cases follow these prepositions? *mit, zu, in, unter, durch, aus, von.*

8. Translate into German:

There was once a poor man who possessed nothing in the world but one field. When he was dying, he called his sons to him and told them that he had nothing to leave them but one field. But that field, he said, contained a treasure, and if they dug long enough, they would find it.

Arithmetic.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—16 „ „ 3—9 „

1. Multiply by factors 3987654 by 54, and divide, using short division, 3296857 by 225.

2. 46897503×6308; $46897503 \div 6308$.

3. Reduce £476 17*s.* 6*d.* to half-crowns; £38 5*s.* 9*d.* to pence; £62 7*s.* 11½*d.* to halfpence; 47958 farthings to pounds, shillings, and pence.

4. 7 tons 6 cwt. 3 qrs. 19 lb. 14 oz. – 4 tons 13 cwt. 2 qrs. 27 lb. 12 oz.

5. 6 ac. 3 ro. 26 po. 28 sq. yds. 5 sq. ft. × 56.

6. Find the H.C.F. of 5187 and 5850; of 1847 and 8209; also the L.C.M. of 140 and 360; of 45, 35, 75, 25, and 100.

7. Find the value of:

(i) $6\frac{13}{19} + 4\frac{11}{19} - 6\frac{18}{19} + 9\frac{7}{19}$;

(ii) $7\frac{15}{17} \times 8$;

(iii) $3\frac{4}{7} \div 2$;

(iv) $3\frac{2}{5} + 5\frac{1}{8} - 6\frac{4}{15} + 12\frac{5}{24}$;

(v) $4\frac{1}{9} + 3\frac{3}{7}$ of $6\frac{5}{12} + 4\frac{1}{8} \div 4\frac{3}{8}$;

(vi) $\dfrac{7\frac{3}{4} + 4\frac{1}{8}}{2 - \dfrac{1}{7\frac{1}{2}} \text{ of } \frac{4}{5}}$.

8. If a man walk 18 miles in 4 hrs. 20 min., what is his rate per hour?

9. If 450 articles at £2 10*s.* 6*d.* each, and a certain number at 5*s.* 8½*d.* each amount to £1215 6*s.* 2½*d.*, how many articles of the latter kind are there?

Algebra.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—14 „ „ 3—8 „
„ 14—16 „ Junior work, page 454.

1. When $a=5$, $b=3$, $c=4$, $d=5$, $e=0$, find the value of

(i) $a+b-d+c+e-(a+b)$;
(ii) $ab+cd-be+ac$;
(iii) $a^2b+b^3-c^2+4d^2-5e^3$;
(iv) $\dfrac{5a^2c^2d^2}{3abc^2d}$.

2. Simplify

(i) $3a+4b-5c-12a+6b-4c-3a-7b-6c-5a$;
(ii) $a^2+4ab+3b^2+7b^2-6ab+12a^2-5a^2-3ab+4b^2$;
(iii) $a+2b-[3a+\{4b-(2a-\overline{7a+2b}+3a)+4a\}+5a]$.

3. From $4a^2x+3ax^2-5x^3$ take $6x^3-7a^2x+12ax^2$; also from $9a^3-8a^2b+16ab^2-12b^3$ take $4a^2b+7ab^2-3a^3-6b^3$.

4. Multiply $12a^5b^3c^2d$ by $14ac^3e^2$; also $15x^3+3x^2y-4xy^2+12y^3$ by $-3xy$; also $a^2+2ab-b^2$ by $3+ab-b^2$.

5. Divide $15a^7b^5c^3\div5a^3b^5c$; also $12x^4y^3-84x^3y^4+108x^2y^5-144xy^6$ by $-12xy$; also $32a^4+54ab^3-81b^4$ by $2a+3b$.

6. Simplify (i) $\dfrac{a^4-b^4}{a^2-2ab+b^2}\times\dfrac{a-b}{a^2-ab}$;

(ii) $\dfrac{1}{a+b}+\dfrac{b}{a^2-b^2}-\dfrac{a}{a^2+b^2}$;

(iii) $\dfrac{\dfrac{a+x}{a-x}+\dfrac{a-x}{a+x}}{\dfrac{a+x}{a-x}-\dfrac{a-x}{a+x}}$.

7. The sum of two numbers is 535; their difference equal $\frac{1}{4}$ of the greater. Find the numbers.

8. The length of a field is twice its breadth; another field 50 yards longer and 10 yards broader contains 6800 square yards more than the first. Find the size of each.

Geometry.

Ages 10—12 work Nos. 1—6 inclusive.
„ 12—14 „ „ 1—10 „
„ 14—16 „ Junior paper, page 452.

1. Define an angle, right angle, obtuse angle, circle, semi-circle, arc, rectilineal figure, square, rhombus, rhomboid.

2. Explain the terms: axiom, postulate, problem, theorem, hypothesis, corollary, rider, proof, Q.E.D., and Q.E.F.

3. Enunciate Prop. II., and draw the figure (i) when the point C is in the same straight line as AB, and (ii) when the point C is a little above the middle point of AB.

4. Let ABC be a circle in which AB is a chord; it is required to bisect AB.

5. At a given point in a given straight line make a rectilineal angle equal to a given rectilineal angle.

6. All the angles of every triangle are equal to two right angles. Give a practical proof of this proposition.

7. Enunciate the propositions which tell when lines are parallel.

8. Triangles upon the same base and between the same parallels are equal to one another.

9. If the square described upon one of the sides of a triangle be equal to the squares described upon the other two sides of it, the angle contained by these two sides is a right angle.

10. In the figure of Euclid I. 1., the given line is produced to meet the circumference of either circle in P. Shew that P and points of intersection of the circles are the angular points of an equilateral triangle.

Religious Knowledge.

Junior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) CHURCH CATECHISM.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*).

(*a*)

1. What is recorded of Manasseh? What is the figurative language used to describe the calamities that should come upon Jerusalem?

2. Where were the following places: Bethel, Megiddo, Beersheba, Kidron? Mention some events connected with these places.

3. Give some account of the reformation in the reign of Josiah.

(*b*)

4. Shew from the later history of Jerusalem that the words of Christ were literally fulfilled with reference to the destruction of the Temple.

5. To what place did the Christian Jews go when they fled from Jerusalem? At what season of the year did the siege of Jerusalem take place? See chap. xiii. 18.

6. How was the Passover feast arranged and celebrated in the time of our Lord? What difference do you remark in the constitution of the Passover feast and the Lord's Supper?

7. What Psalms constituted the "Hallel" which was sung at the Passover?

(*c*)

8. Quote a passage which shews the restraint St. Paul placed upon his natural feelings where his duty was concerned.

9. What reason is given by St. Paul for the suffering which he called a thorn in the flesh? In what words was the petition answered?

(*d*)

10. Give instances from Scripture of the use of material things as signs and pledges, and also as supernatural means of grace.

Religious Knowledge.

Senior.

(*a*) 2 KINGS; (*b*) ST. MARK; (*c*) 2 CORINTHIANS; (*d*) PRAYER BOOK; (*e*) HORÆ PAULINÆ.

No Student will be examined in more than three of the Subjects (*a*), (*b*), (*c*), (*d*), (*e*).

(*a*)

1. Under what circumstances did Isaiah utter his prophecy to Hezekiah concerning the Babylonish captivity? Criticise Hezekiah's reply.

2. Give in your own words the history of the finding of the book of the law in the Temple, and Huldah's prophecy.

(*b*)

3. Discuss the meaning of the phrase "the abomination of desolation," and also the allusions in chap. xiii. 15.

4. What motives do you think may have actuated Judas Iscariot in his betrayal of Christ? What curse was pronounced on the Traitor?

5. Relate the scene in Simon's house, and give the prophetical words uttered by our Saviour on this occasion.

6. "And there followed him a certain young man." What conjectures have been hazarded about this occurrence?

(*c*)

7. "Behold, the third time I am ready to come to you." What different interpretations are given of this passage?

8. From what passage in the Old Testament is the quotation taken in chap. xiii. 1?

(*d*)

9. What alterations in the Litany were made by Cranmer in the reign of Henry VIII.? In what points did the Litany thus set forth differ from that in present use?

(*e*)

10. For what qualities has the Epistle to Titus been admired?

11. Shew by proofs taken from the Epistles of Philemon and Colossians that Onesimus was a Colossian.

Religious Knowledge.

Higher Local.

I. OLD TESTAMENT: THE CAPTIVITY AND THE RETURN,—*viz.* THE HISTORICAL PARTS OF JEREMIAH; EZRA; NEHEMIAH; PSALMS, BK. III., LXXIII.—CVI. II. NEW TESTAMENT: ST. JOHN; THE EPISTLES TO THE GALATIANS AND EPHESIANS; ST. JAMES. (Credit will be given for a knowledge of the original Greek.) III. (*a*) BUTLER'S ANALOGY, INTRODUCTION AND PART II.; (*b*) HOOKER'S ECCL. POL., PREFACE AND BK. I.; (*c*) PALEY'S HORÆ PAULINÆ, CHAP. 1—5.

I.

1. (Jer. i.—xii.) Give a short account of the stringent religious reform instituted by Josiah. Can it be said to have had any lasting effect? Explain his policy with regard to Egypt. What important consequences followed the battle of Megiddo? What struggles had already taken place there, and of what is this battle said to be the type? (Zech. xii.; Rev. xvi.)

2. If we regard these chapters as containing the first portion of Jeremiah's prophecies, what are the subjects of the following chapters: ii.—iii. (with Zephaniah); iv.—vi. (with Habakkuk); vii.—x.; xi.—xii. Under what figure is Judah represented?

3. Explain the symbols of the almond-tree and the seething-pot.

Comment briefly on the following passages:

Chap. i. 9. Compare Isai. vi., Ezek. ii., Luke xxi.

Chap. i. 15. When was this fulfilled?

(i) "Reprobate silver shall men call them."

(ii) "The men of Anathoth."

4. (Pss. lxxiii.—lxxxiii.) These psalms are all attributed to Asaph, yet lxxiv. and lxxix. bear strong internal evidence of having been written at least as late as the Captivity. How do you account for this? What are the characteristics of the psalms by Asaph? Distinguish between a Maschil and a Psalm or Song.

5. Explain the difference between the Bible and Prayer Book versions of the Psalter.

6. Explain Ps. lxxiii. 9—10; lxxxi. 3; lxxxiii. 9—11.

Ps. lxxiv. "They set up their ensigns for signs." This has been considered as an indication that this psalm belongs to the Maccabæan period. Compare vv. 3—9 with 1 Macc. i.

Ps. lxxviii. Give the period embraced by this psalm, with the leading events it records. Name some Old Testament parables.

II.

7. This Gospel may be considered in three portions: (i) the Prologue, chap. i. 1—18, containing a general statement of the whole subject of the Gospel; (ii) Chap. i. 19—xx. relates the ministry of Christ in Galilee, Judæa, and Samaria, His reception and rejection, sacrifice and resurrection; (iii) the Appendix, chap. xxi., which was probably added to combat the error becoming prevalent concerning himself; it records also the important miracle of the "Second draught of Fishes." Prove, from internal evidence, that each division works out the purpose which St. John declares himself to have had in writing his Gospel.

8. Explain St. John's meaning of "The Word." Against what heresy was he striving?

9. Who were the Galatians, and how did they first receive St. Paul? Contrast this enthusiasm with the treatment he experienced on his second visit. What had occasioned this change? How can the date of this epistle be fixed with tolerable certainty from internal evidence?

Comment on, "But neither Titus was compelled to be circumcised," and on St. Paul's controversy with St. Peter at Antioch.

III. (*a*)

10. How does Butler define the argument of Probability and its value? What sort of difficulties must those expect to encounter who believe that God is the author of Nature and of Revelation? How does he propose to carry on his argument?

(*b*)

11. Give a short account of the circumstances which induced Hooker to publish his *Ecclesiastical Polity*. When did the first four books appear? To whom was his preface addressed, and how divided? What was the "Lord's Discipline" and the "Genevan platform"? What does he say of Calvin?

(*c*)

12. Under what circumstances, and for what reasons, does Paley assert that conformity between letters attributed to any author, and a received history of his life, would not necessarily prove the genuineness of either? What does he specially beg his readers to regard as the essential characteristics of the coincidences which he intends to offer? What does he notice as the peculiarities in St. Paul's Epistles which enable us to distinguish them from the spurious epistles which have reached us?

English History.

Junior.

(*a*) FROM ACCESSION OF HENRY VII. TO THE DEATH OF ELIZABETH; (*b*) GENERAL QUESTIONS.

(*a*)

1. Give a short account of the discoveries and exploits of Frobisher and Drake, noting with what power they came into collision, and the general and political results of their so doing.

2. What political considerations made both France and the English Ministers urge upon Elizabeth a marriage with the Duke of Anjou?

3. Give the reasons which induced Philip of Spain to send the Armada against England, describing the preparations made to receive it, and their outcome.

4. Indicate the powers enjoyed by the Court of High Commission, and the Primates who most tyrannically exerted the same.

5. Enumerate the possible claimants to the throne on the death of Elizabeth, shewing whence they derived their claim.

6. Senior Paper, No. 5.

(*b*)

7. Senior paper, No. 7.

8. Give particulars of the impeachment of Buckingham, the Petition of Right, Ship-money, the Treaty of Ripon, the Grand Remonstrance, the battle of Naseby, and battle of Dunbar.

9. Name the Ministers who formed the Cabal Ministry, and indicate their policy.

10. Senior Paper, No. 10.

Geography.

PHYSICAL, POLITICAL, AND COMMERCIAL GEOGRAPHY OF EUROPE AND AFRICA.

1. Give the boundaries and enumerate the provinces included in the Netherlands. What is the Government of the same? What its industry and wealth? Enumerate and give the positions of its most important colonies.

2. Contrast in as many respects as may be the Scandinavian and Italian peninsulas.

3. Describe the courses of the rivers Niger, Congo, and Zambesi.

4. Senior Paper, No. 4.

English History.

Senior.

(*a*) From Accession of Henry VII. to the death of Elizabeth; (*b*) General Questions.

(*a*)

1. What circumstances caused insurrections in Ireland between 1565 and 1580? Describe the course of the same, and Elizabeth's policy with regard to them.

2. What reasons had Elizabeth for dreading an alliance of the Catholic powers of Europe against her? Mention any incidents which pointed to such an one having been formed, and indicate Elizabeth's policy when she discovered it.

3. Describe as fully as possible the circumstances which led to, and the objects of, the Mar-Prelate controversy.

4. Junior Paper, No. 4.

5. Indicate as clearly as possible Elizabeth's policy with regard to the Netherlands previous to the battle of Zutphen.

6. Junior Paper, No. 5.

(*b*)

7. Enumerate the different methods Cecil had recourse to in 1607 and 1608 to raise money for James I., and state the grievances which the Commons brought forward when, in 1608, he applied for an increased revenue.

8. Junior Paper, No. 8.

9. Junior Paper, No. 9.

10. Describe fully the causes which led to, and the course of, Monmouth's rebellion in 1685.

Geography.

Physical, Political, and Commercial Geography of Europe and Africa.

1. Describe the physical features of the Netherlands, and indicate any effect they may probably have had upon the character and industry of the Dutch.

2. Junior Paper, No. 2.

3. Junior Paper, No. 3.

4. Draw a map of the Netherlands, in which insert rivers, provinces, and the following towns: Leyden, Flushing, Breda, Zutphen, Haarlem, Nimeguen, Leeuwarden, Kampen, Utrecht, Arnhem, Delft, Ryswick. [Note, the outline may be copied or traced from an atlas, the rest must be added from memory.]

English History.

Higher Local. Group H.

(*a*) GENERAL, 1135—1216; (*b*) SPECIAL, 1625—1642.

(*a*)

1. Divide the reign of Stephen into periods. Give your reasons for the arrangement you adopt. Mention the leading events in each period.

2. Draw a map, shewing the extent of the possessions of Henry III. How and when did he become possessed of each of them?

3. Write a short essay on Henry's quarrel with the Church.

4. What changes did he introduce in the military organisation?

5. Give a brief account of the history of England during the absence of Richard I., 1190—94.

6. Sketch the events which led to the signing of Magna Charta. Give a summary of its contents.

7. Trace the subsequent policy of the baronial party down to the death of John.

(*b*)

8. Give an account of the relations between Charles I. and his parliaments during this period.

9. Describe the foreign policy of Charles and Buckingham.

10. Examine into the expedients for raising money resorted to by Charles I.

11. Analyse the contents of the Petition of Right. Compare it with Magna Charta and the Bill of Rights.

12. What is meant by the Policy of "Thorough"?

13. Trace the influence of Scotch affairs on English history, 1630—40.

English Literature.

Junior.

KING RICHARD II.

1. Give the meaning of the following phrases, with instances of their use: *fall to, deed of slander, numbering clock, thoughts are minutes, untimely bier.*

2. Give the modern and Shakesperian meaning of the following words: *humours, voyage, confound, chopping, cropp'd, miscreant, suggest, baffled, postern.*

3. Give, in your own words, the substance of Richard's speech in prison.

4. By whom and to whom were the following words addressed?

(i) "Mine honour lives when his dishonour dies."

(ii) "Hath Bolingbroke depos'd
Thine intellect?"

(iii) "I see some sparks of better hope,
Which elder days may happily bring forth."

(iv) "Then give me leave that I may turn the key."

English Grammar.

1. Describe the use of each case in English.

2. Write down sentences, introducing the following words as different parts of speech: *but, that, for, round, abstract.*

3. Senior Paper, No. 1.

4. What exception is there to the rule that every nominative case belongs to some verb either expressed or implied?

5. Analyse, and parse the words in italics:

"So *all* day *long* the noise of battle rolled
Among the mountains *by* the *winter sea.*"

English Literature.

Senior.

KING RICHARD II.

1. Explain and annotate the following passages:

(i) "Love to Richard
Is a strange brooch in this all-hating world."

(ii) "Thanks, noble peer,
The cheapest of us is ten groats too dear."

(iii) "That jade hath eat bread from my royal hand."

2. Give the meaning and derivation of the following words: *silly, peer, yearn, bier, noisome, betide, glose.*

3. Give from the play examples of (i) compound adjectives; (ii) double negatives; (iii) the use of adjectives as verbs.

4. Scan the following lines:

(i) "For now hath time made me his numbering clock."

(ii) "His eyes do drop no tears, his prayers are in jest."

(iii) "But for our trusty brother-in-law, the abbot."

English Grammar.

1. What is the usual inflection for the plural? Account for the forms *children, kine, oxen, phenomena, formulæ.*

2. Give the feminine of *widower* and *executor.* Whence do we get the feminine endings *-ess, -ster, -en?* Mention a few apparently irregular ways of forming the feminine.

3. Analyse the following sentence, and parse the words in italics:

"*To* grass, or leaf, or fruit, or *wall,*
The snail sticks *close, nor* fears to *fall,*
As if he grew *there,* house and *all*
Together."

English Language and Literature.

Higher Local.

(*a*) HENRY V.; (*b*) BACON'S ESSAYS, I.—XXVIII.; (*c*) MILTON'S PARADISE LOST, I.—IV.; (*d*) HISTORY OF ENGLISH LITERATURE.

(*a*)

1. Explain the following passages:

(i) "They sell the pasture now to buy the house,
Following the mirror of all Christian kings,
With winged heels, as English Mercuries.
For now sits Expectation in the air,
And hides a sword from hilts unto the point
With crowns imperial, crowns and coronets,
Promised to Harry and his followers."

(ii) "It was excess of wine that set him on,
And on his more advice we pardon him."

(iii) "'Tis so strange
That, though the truth of it stands off as gross
As black and white, my eye will scarcely see it."

(iv) "If that same demon that hath gull'd thee thus
Should, with his lion gate, walk the whole world,
He might return to vasty Tartar back,
And tell the legions, 'I can never win
A soul so easy as that Englishman's.'"

(v) "Not working with the eye without the ear."

(vi) "I am not Barbason; you cannot conjure me."

2. In what sense are the following words used? Give an instance of each: pass, exhale, security, enlarge, quick, instance, tempered, jealousy, show, bolted, earnest, dear.

3. Account for any grammatical peculiarities in the following:

(i) "What mightest thou do, that honour would thee do."

(ii) "Here comes ancient Pistol and his wife."

(iii) "Nor leave not one behind."

(iv) "With hearts create of duty and of zeal."

(*b*)

4. Comment on the following:

(i) "So the care of posterity is most in them that have no posterity."

(ii) "A single life doth well with church men, for charity will hardly water the ground where it must first fill a poole."

(iii) "So as a man may have a quarrell to marry when he will."

(iv) "It is a poore saying of Epicurus, 'Satis magnum alter alteri theatrum sumus.'"

(v) "As for the other losses, the Poet's relation doth well figure them; that he that preferred Helena quitted the gifts of Juno and Pallas."

5. What persons does Bacon consider are most apt to be envious, and what persons are most liable to be envied?

6. What distinction does Bacon make between public and private envy?

7. Who were Ulysses, Nares, Agesilaus, Tamberlanes, Adrian, Marcus Antonius, Appius Claudius, and how does Bacon refer to them?

(*c*)

8. Give in your own words Moloch's arguments for and Belial's against a renewal of the war with heaven. What did Mammon and Beelzebub counsel?

9. Paraphrase:

(i) "Let us not then pursue
By force impossible, by leave obtained
Unacceptable, though in heaven, our state
Of splendid vassalage, but rather seek
Our own good from ourselves."

(ii) "For neither do the spirits damn'd
Lose all their virtue; lest bad men should boast
Their specious deeds on earth, which glory excites,
Or close ambition varnisht o'er with zeal."

10. Analyse grammatically *Paradise Lost*, Bk. II., from line 18, beginning "Me though just right," to line 24, "yielded with full consent."

11. In what sense does Milton use the words: neck, drench, exercise, impendent, argue, reluctance, confines, opinion?

12. Explain: The sensible of pain—Atlantean shoulders—Ere he arrive the happy isle.

(*d*)

13. Write short notes on the following books: *The Schole-master, The Mirror of Magistrates, Utopia, The Polyolbion.*

14. What do you know about the Martin Marprelate controversy?

15. Make a brief analysis of Hooker's *Ecclesiastical Polity.*

English Language.

SWEET, ANGLO-SAXON READER, IX. AND XXI. LINES 1—121.

1. Give the cardinal numbers up to twenty. Decline those which are declinable, and explain which are only declined in certain positions.

2. Give the Anglo-Saxon of *far, high, bad, fair, old, dear,* with their comparatives and superlatives.

Decline fully: a stronger warrior (*wigend*), the younger son, the greatest city (*burh*).

3. What are the Anglo-Saxon forms of *man, gate, yard, back, egg, end, kin, bond, flock, dull, full*? Which of these have undergone vowel change, and how do you account for it in each case?

4. Translate, explaining carefully all difficulties of construction:

SWEET, *Anglo-Saxon Reader*, IX. 9—21, 24—33, 45—55; XXI. 7—21, 46—54, 83—94, 103—117.

Parse eá, IX. l. 14; hearpere, l. 17; heáfdu, l. 26; seldcúđan, l. 29; gydena, l. 31; menn, l. 32; đeódne, XXI. l. 3; fira, l. 24; healfne, l. 105.

Distinguish between đeód, đeóden, and geđeóde, giving the meaning and gender of each, and shewing their connexion with each other.

5. Translate without a dictionary, parsing the words underlined:

Se hwael bið micle laessa đonne óđre hwalas: ne bið he lengra đonne seofon elna lang; ac on his ágnum lande is se betsta hwael-huntað; đá beóð eahta ond feówertiges elna lange, ond dá máestan, fiftiges elna lange; đára hé sáede đaet hé sixa sum ofslóge sixtig on twám dagum.

Explain the construction *sixa sum*.

6. Translate into Anglo-Saxon:

The prophet wrote concerning the four animals which were shewn to him, that they had eyes on each side of them. One of the animals was shewn to him in human form, the second in the form of a lion, the third in that of a calf, the fourth in that of an eagle.

Latin.

Junior.

VIRGIL, AENEID, II.; CAESAR, DE BELLO GALLICO, III.

1. Decline fully, giving the gender and meaning: *collis, humus, pelagus, ligo, os, silex.*

2. Give a series of rules for proper use and meaning of *se, suus, ipse,* with examples.

3. Give the pluperfect indicative active and the imperfect subjunctive passive of *aufero, praetereo, claudo, pendo, demo, lexo, sino.*

4. How do you form adverbs in Latin? What adverbs are derived from *difficilis, alius, nequam?*

5. Translate, with brief marginal notes:

VIRGIL, *Aeneid,* II. 705—729.

CAESAR, *de Bello Gallico,* c. 26.

6. Where are Toloser, Narbo, and for what are they noted?

7. Translate:

(i) The life of private individuals is both easier and safer, and less burdensome or troublesome to others; but that of those who have applied themselves to politics and the prosecution of great affairs is more profitable to the human race and better adapted for fame and greatness.

(ii) Without government, no house, state, nor nation, no, nor the world itself can stand; for it is subject to God, and the seas and lands obey it, and the life of man conforms to the decrees of the supreme law.

(iii) And, as Plato wrote to Archytas, let him remember that he was born not for himself alone, but for his country, and for his friends.

(iv) The arrival of the ambassadors increased rather than diminished the fear of the state.

Latin.

Senior.

VIRGIL, AENEID, II.; LIVY, XXI.

1. Decline fully and translate: *imber nive mixtus—praealtis ripis—examen apum—anceps terror.*

2. Give the present subjunctive passive and the future perfect indicative active of *refero, pingo, spargo, caveo, sedeo, tollo.*

3. Give the rules for the use of (i) the gerund, (2) the gerundive.

What do you understand by the gerundive attraction?

4. In how many ways can you express (i) price for which you buy a thing; (ii) quality? What is the distinction?

5. What were the duties of Quaestors and Praetors?

6. Translate, with short marginal notes:

VIRGIL'S *Aeneid*, Bk. II. 705—729.

LIVY, Bk. XXI. c 50.

7. Translate (if possible without a dictionary):

(i) These men carefully humour the pleasure of Sextus Naevius in the same way as though their own property or honour were at stake.

(ii) There shall be no colony of yours which shall surpass us in submission and fidelity to you.

(iii) I think that the Roman nation is on this account unconquered, because in prosperity it remembers to be wise and provident.

(iv) Although I send you a letter of this sort very often when I return thanks because you attend to my introductions, yet, nevertheless, I will not hesitate to write a second time on the same subject.

(v) Quod si decessisset, et liberam possessionem Galliae sibi tradidisset, magno se illum praemio remuneraturum, et quaecunque bella geri vellet, sine ullo ejus labore et periculum confecturum. Multa ab Caesare in eam sententiam dicta sunt, quare negotio desistere non posset, et neque suam neque populi Romani consuetudinem pati, uti optime meritos socios desereret, neque se judicare Galliam potius esse Ariovisti, quam populi Romani.

Latin.

Higher Local.

LIVY, VI.; HORACE, ODES, Bk. III.

1. Decline fully the following, giving their gender and meaning: *pelagus, vas, nex, lapis, iter, merges, fustis.*

2. Quote or frame sentences to illustrate the various forms of a Latin conditional sentence, (i) in *oratio recta,* (ii) in *oratio obliqua,* (iii) in a consecutive sentence introduced by *ut.*

3. Explain and classify the uses of the subjunctive mood in the following sentences:

(i) ut vigeant sensus animi ducenda tamen sunt
Funera natorum.

(ii) dixi sententiam, cum abessent consulares, quod suto se negarent posse sententiam dicere.

(iii) Cur non inauguare? sume diem: vide qui se inauguret.

4. Classify the uses of the Latin participle. Give examples.

5. Translate, with marginal notes:

LIVY, VI. c. 10.

HORACE, ODES, Bk. III. 5. 1.

6. Give a short account of Horace.

7. Translate (without a Dictionary):

Non mihi uxor aut filius patre et republica cariores sunt: sed illum quidem sua majestas, imperium Romanum ceteri exercitus defendent: conjugem et liberos meos, quos pro gloria vestra libens ad exitium offerem, nunc procul a furentibus submoveo: ut, quidquid istuc sceleris imminet, meo tantum sanguine pietur: neve occisus Augusti pronepos, interfecta Tiberii nurus, nocentiores vos faciat. Quid enim per hos dies inausum intemeratumve vobis? quod nomen huic coetui dabo? militesne appellem? qui filium imperatoris vestri ballo ut armis circumsedistis.

8. Translate:

Before the sweeping pursuits of his Numidians crowds of fugitives were seen flying towards the city, while the smoke from the burning houses arose far and wide into the sky. Within the walls the confusion and terror were at their height: he was come at last, this Hannibal whom they had so long dreaded; he had at length dared to do what even the slaughter of Cannae had not emboldened him to venture. Some victory greater even than Cannae must have given him this confidence: the three armies before Capua must be utterly destroyed.

Greek.

Junior.

XENOPHON, ANABASIS, IV.; EURIPIDES, HERACLEIDAE.

1. Decline fully, giving gender and meaning: *μῆκος, θρίξ, λόφος, ἥρως, κῆρυξ, κίων.*

2. Classify the usages of the participle.

3. How do you compare adjectives in Greek?

Compare *γλυκύς, παλαίος, μέσος, πτωχός.*

4. Give the perfect and second aorist active of *τρέχω, φέρω, ὁράω, εὑρίσκω, λανθάνω, κάμνω.*

5. Parse the following: *προσήκει, δέοιτο, ἤστην, ἔτεκε, ἀνετρέφετο, ἔφυ.*

6. Translate with careful marginal notes:

XENOPHON, *Anabasis*, c. VIII. §§ 1—8.

EURIPIDES, *Heracleidae*, 748—783.

7. Translate the following:

(i) The thirty tyrants for the sake of their own private gains put to death more Athenians in eight months than all the Peloponnesians in ten years.

(ii) The love of money is the root of all evil.

(iii) This country produces two crops each year.

8. Translate:

(i) *οὐχὶ πέντε στρουθία πωλεῖται ἀσσαρίων δύο; καὶ ἓν ἐξ αὐτῶν οὐκ ἔστιν ἐπιλελησμένον ἐνώπιον τοῦ θεοῦ· ἀλλὰ καὶ αἱ τρίχες τῆς κεφαλῆς ὑμῶν πᾶσαι ἠρίθμηνται. μὴ οὖν φοβεῖσθε· πολλῶν στρουθίων διαφέρετε.*

(ii) *ὡς δὲ προέτεινεν αὐτὸν τοὺς ἱμᾶσιν, εἶπε πρὸς τὸν ἑστῶτα ἑκατόναρχον ὁ Παῦλος, εἰ ἄνθρωπον Ῥωμαῖον καὶ ἀκατάκριτον ἔξεστιν ὑμῖν μαστίζειν; ἀκούσας δὲ ὁ ἑκατόνταρχος, προσελθὼν ἀπήγγειλε τῷ χιλιάρχῳ λέγων, ὅρα τί μέλλεις ποιεῖν· ὁ γὰρ ἄνθρωπος οὗτος Ῥωμαῖός ἐστι.*

Greek.

Senior.

PLATO, APOLOGY; EURIPIDES, HERACLEIDAE.

1. Translate and decline fully the following: *shield, flute, wound, mirror, mouth, dream.*

2. Give the principal parts of the following, active, middle, and passive: *τρέχω, φέρω, ὁράω, εὑρίσκω, λανθάνω, κάμνω.*

3. What do you take to be the meaning of the particle *ἂν*? When is it not important in the sentence?

4. Give, with examples, the various uses of *οὐ* and *μὴ*, singly and in combination.

5. Translate with careful marginal notes:

PLATO, *Apology*, c. 30.

EURIPIDES, *Heracleidae*, 748—783.

6. State what you know of the mode of procedure in an Athenian law-court.

7. Translate (if possible without a dictionary):

(i) Socrates caused many to abstain from evil, making them to long after virtue, and holding out to them hopes that, if they had care for themselves, they would become noble and good men; and yet he never professed to be a teacher of this.

(ii) Thrice wretched ones, what have they more than the rest? Those guarding the forts endure life as a piteous burden, and those who possess the citadels, if they thus easily imagine all who approach them wear daggers, what a penalty do they pay!

(iii) To act is hard, to give the command is easy.

8. Translate:

(i) *ἀλλ' ὅταν κληθῇς, πορευθεὶς ἀνάπεσον εἰς τὸν ἔσχατον τόπον· ἵνα ὅταν ἔλθῃ ὁ κεκληκώς σε, εἴπῃ σοι, φίλε προσανάβηθι ἀνώτερον· τότε ἔσται σοι δόξα ἐνώπιον τῶν συνανακειμένων σοί. ὅτι πᾶς ὁ ὑψιῶν ἑαυτὸν ταπεινωθήσεται· καὶ ὁ ταπεινῶν ἑαυτὸν, ὑψωθήσεται.*

(ii) *τίς γὰρ οἶδεν ἀνθρώπων τὰ τοῦ ἀνθρώπου, εἰ μὴ τὸ πνεῦμα τοῦ ἀνθρώπου τὸ ἐν αὐτῷ; οὕτω καὶ τὰ τοῦ θεοῦ οὐδεὶς οἶδεν, εἰ μὴ τὸ πνεῦμα τοῦ θεοῦ. ἡμεῖς δὲ οὐ τὸ πνεῦμα τοῦ κόσμου ἐλάβομεν, ἀλλὰ τὸ πνεῦμα τὸ ἐκ τοῦ θεοῦ, ἵνα εἰδῶμεν τὰ ὑπὸ τοῦ θεοῦ χαρισθέντα ἡμῖν.*

Greek.

Higher Local.

THUCYDIDES, Bk. IV.; SOPHOCLES, OEDIPUS COLONEUS.

1. Parse the following: *ἤλασεν, ἱέμεσθα, παρίστασαι, βέβακε, καθῆσθαι, κατέθεντο, ἐπήνεσα, γνῶναι.*

2. What is meant by an absolute construction? How far do these constructions differ from the ordinary use of the cases? What cases were so used in Greek?

3. Discuss the use of the cases in the following:

(i) *τῆς κεφάλης ὄζω μύρου.*

(ii) *οὐδενὶ πώποτε ἔδωκε χρήματα τοῦ λοιποῦ.*

(iii) *τῶν Εἰλώτων βουλομένοις ἦν ἐκπέμψαι.*

(iv) *Κύρῳ πολεμοῦντες.*

(v) *πῶς γὰρ ἤ τιν' ἀπιάν γῆν . . . ἀλωμέναι.*

4. Translate, with marginal notes:

THUCYDIDES, Book IV. c. 13.

SOPHOCLES, *Oedipus Coloneus*, 337—360.

5. Translate and explain fully:

(i) *ἀλλὰ μὴ οὐ τοῦτ' ᾖ χαλεπὸν, θάνατον φυγεῖν, ἀλλὰ πολὺ χαλεπώτερον πονηρίαν.*

(ii) *ἐχρῆν αὐτοὺς ζητεῖν ἵνα ἀπηλλάμεθα τούτου τοῦ δημαγωγοῦ.*

6. Translate:

Indeed it is difficult to conceive a more moving scene than the embarkation of these unhappy veterans. They were themselves extremely averse to the service in which they were engaged, and fully apprized of all the disasters they were afterwards exposed to,—the apprehensions of which were strongly marked by the concern that appeared in their faces, which was mixed with no small degree of indignation.

7. Translate:

(i) *ἀλλ' ὅταν κληθῇς πορευθεὶς ἀνάπεσον εἰς τὸν ἔσχατον τόπον· ἵνα ὅταν ἔλθῃ ὁ κεκληκώς σε, εἴπῃ σοι φίλε προσανάβηθι ἀνώτερον· τότε ἔσται σοι δόξα ἐνώπιον τῶν συνανακειμένων σοι ὅτι πᾶς ὁ ὑψῶν ἑαυτὸν ταπεινωθήσεται καὶ ὁ ταπεινῶν ἑαυτὸν, ὑψωθήσεται.*

(ii) *τὶς γὰρ οὐδεν ἀνθρώπων τὰ τοῦ ἀνθρώπου, εἰ μὴ τὸ πνεῦμα τοῦ ἀνθρώπου τὸ ἐν αὐτῷ; οὕτω καὶ τὰ τοῦ θεοῦ οὐδεὶς οἶδεν, εἰ μὴ τὸ πνεῦμα τοῦ θεοῦ. ἡμεῖς δὲ οὐ τὸ πνεῦμα τοῦ κόσμου ἐλάβομεν, ἀλλὰ τὸ πνεῦμα τὸ ἐκ τοῦ θεοῦ, ἵνα εἰδῶμεν τὰ ὑπὸ τοῦ θεοῦ χαρισθέντα ἡμῖν.*

French.

Junior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE.

1. Translate into English:

"Moi," dit la troisième, "j'ai ramassé le noyeau que mon petit frère avait jeté par terre. Je l'ai brisé, et j'y ai trouvé une amande qui avait le goût d'une noix. Mais j'ai vendu ma pêche, et avec l'argent que j'en ai reçu je puis en acheter plusieurs autres quand j'irai à la ville."

Le père secouait la tête: "Cela peut paraître une ingénieuse idée, mais j'aimeraism ieux moins de calcul."

2. Give the preterite and imperfect subjunctive of *jeter, dire, manger, vendre, s'en aller;* the infinitive and participles of *prendre, faire, s'écrier.*

3. What is the difference between *savoir* and *connaître; vivre* and *demeurer; mouvoir* and *émouvoir?* Give examples.

4. Translate: *Le Directoire,* p. 26, l. 25, to p. 27, l. 14; also p. 71, l. 26. to p. 72, l. 6.

5. Give the feminines of *pareil, pas, sot, gras, flatteur, ancien, sujet, sec, frais.*

6. Translate in as many ways as possible:

She is fourteen years old.—It is a quarter to three.—It is twenty-five minutes past eleven.—I went to bed last night at half-past nine.

7. When is *some* or *any* before a noun translated by *de* only? Give examples.

8. Translate into French:

What is the matter with your cousin? I think she has a slight cold. I am very sorry for it; she is always so merry when she is well. You are right, but she is not very ill. So much the better.

French.

Senior.

GRAMMAR; TRANSLATION; LE DIRECTOIRE; LE MISANTHROPE.

1. Junior Paper, No. 4.

2. Give examples of the different uses of *tout* and *même* as adjectives and as adverbs.

3. Translate: *Le Misanthrope*, Act III. Sc. vii., "*Alceste.*—Et que voudriez-vous" to "essuyer la cervelle."

Explain, with derivations where necessary: *donner prise; se targuer; faire la mine.*

4. Give the preterite of *moudre* and *médire;* the imperative of *se couvrir* and *croire;* the imperfect subjunctive of *s'asseoir* and *manger.*

5. Give the plurals of *ver-à-soie; garde-suisse; pied-à-terre; reveille-matin; coq-à-l'âne.*

6. Translate:

Le silence est profond dans cette ville dont les rues sont des canaux, et le bruit des rames est l'unique interruption à ce silence; ce n'est pas la campagne, puisqu'on n'y voit pas un arbre; ce n'est pas la ville, puisqu'on n'y entend pas le moindre mouvement; ce n'est pas même un vaisseau, puisqu'on n'avance pas; c'est une demeure dont l'orage fait une prison; car il y a des moments où l'on ne peut sortir ni de la ville ni de chez soi. On trouve des hommes du peuple à Venise, qui n'ont jamais été d'un quartier à l'autre.

7. When do *vingt* and *cent* take the mark of the plural, and when are they invariable?

8. Translate into French:

He was certainly a most unfortunate man. His health was not good, and his sons, who ought to have afforded him assistance, were idle and extravagant. He was always trying to reduce his expenses as much as possible, and yet, in spite of all his efforts, we heard at last that he was bankrupt.

9. Give the corresponding idioms for: en être aux expédients; avoir la langue dorée; être le bienvenu; par monts et par vaux; une bête noire; à perte de vue.

French.

Higher Local.

TRANSLATION; GRAMMAR; PHILOLOGY; LITERATURE, 1650–1700.

1. Translate into French:

As soon as he was warm he began to think it would be a long while to wait till after supper before he drew out his guineas, and it would be pleasant to see them on the table before him as he ate his unwonted feast. For joy is the best of wine, and Silas's guineas were a golden wine of that sort. He rose and placed his candle unsuspectingly on the floor near his loom, swept away the sand without noticing any change, and removed the bricks.

2. Give a list of Racine's works in the order of composition. Translate: *Athalie*, Act I. Sc. ii., "*Joad.*—Grand Dieu, si tu prévois" to "funeste avant-coureur"; and Act V. Sc. vi. "*Ath.*—Dieu des Juifs" to "Achab et Jézubel."

3. "[Racine] dispose en maître de la langue; il la domine sans violence, et il en fait, au gré de son génie, une peinture et une musique." Examine this statement.

4. What is the origin of the French compound vowels *oi*, *ui*, *au*? Give examples.

5. "When a Latin word is accented on the antepenultimate, the penultimate vowel always disappears in the French word derived from it." Give examples of this rule.

6. Give the rules of the agreement of the adjectives *nu*, *demi*, *compris*, *feu*.

7. Translate:

At your leisure.—A cat may look at a king.—As mad as a March hare.—Like master like man.—That is a matter of course.

Ce n'est pas pour vos beaux yeux.—Il faut hurler avec les loups.—Au large!—N'avoir que de quoi vivre.—Vous voilà à faire peur.—Le sort en est jeté.

German.

Junior.

UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate, *Ernst, Herzog von Schwaben,* p. 95, "Geächtet" to "verzeihen."

Give the infinitive of *geächtet, schwebt auf, geendet, ersehnt, spricht los.*

2. Translate:

Der blaue Vogel flog immer, wenn der Tag anbrach, nach dem *Versteck* in seinem *Baume* zurück, *dessen Früchte* ihm zur *Nahrung* dienten; manchmal sang er hier noch einige schöne Lieder und entzückte durch seine schöne Stimme die Vorüber gehenden. Da man *ihn* jedoch nur hörte und niemals sah, so glaubte, man allgemein, es sey ein *Geist.*

Give the case of the words in italics, and the reason for their being in that case.

3. Translate:

When he had gone a little way further he came to a wood; he had scarcely gone a few steps in it when he perceived a little house among the trees. Here sat an old woman who was reading aloud to some little children.

4. Write out the German numerals, cardinal and ordinal, from one to ten. Give the German for: three-quarters, five-ninths, 1882.

5. Decline *ich, du, er.* Distinguish the uses of *du, Ihr, Sie* in the 2nd person. How is the pronoun *sich* used?

6. Translate:

(i) He has not a single friend.

(ii) Many a man would be glad to know this.

(iii) All his friends accompanied him.

(iv) Is that the same book of which you were speaking?

German.

Senior.

FREYTAG, DER STAAT FRIEDRICHS DES GROSSEN, AND UHLAND, ERNST, HERZOG VON SCHWABEN.

1. Translate: *Der Staat Friedrichs des Grossen*, p. 54, "Zwar Danzig" to "Flachlandes."

2. What cases follow these words? *ansichtig, bedürftig, schuldig, gewahr, erinnern, dauern* (pity).

3. Translate:

(i) I could not help laughing at his story.

(ii) Can I not convince you of the truth of my words?

(iii) I rejoice at your success.

(iv) You sympathised with my sorrows.

4. Translate: *Ernst, Herzog von Schwaben*, p. 91, "Erhabner Kaiser" to "huldreich an."

Account for the cases of *mir, Statt, Schlacht, Hand, Speer.*

5. Translate:

Grosse Thaten? Ja
Ich weiss die Zeit, da wir sie vor uns sahn!
Wenn wir zusammen oft dem Wilde nach
Durch Berg' und Thäler rannten und dereinst,
An Brust und Faust dem hohen Ahnherrn gleich,
Mit Keul und Schwert dem Ungeheuer so,
Dem Räuber auf der Spur, zu jagen hofften;
Und dann wir Abends an der weiten See
Uns an einander lehnend ruhig sassen,
Die Wellen bis zu unsern Füssen spielten,
Die Welt so weit, so offen vor uns lag,
Da fuhr wohl Einer manchmal nach dem Schwert,
Und künft'ge Thaten drangen wie die Sterne
Rings um uns her unzählig aus der Nacht.

GOETHE, *Iphigenie.*

6. Translate:

Revenge is a kind of wild justice, which the more man's nature runs to, the more ought law to weed it out. For as for the first wrong, it doth but offend the law; but the revenge of that wrong putteth the law out of office. Certainly, in taking revenge, a man is but even with his enemy; but in passing it over he is superior, for it is a prince's part to pardon. BACON.

German.

Higher Local.

GRAMMAR; TRANSLATION; PHILOLOGY; LITERATURE, 1750–1800.

1. Give a brief account of Klopstock's life. What was his chief work? Why may he be said to have failed in it? How would you estimate Klopstock's services to German literature?

2. Name Wieland's chief works, and write a short account of one of them.

3. Translate:

Wenn man in einzelnen Fällen den Maler und Dichter mit einander vergleichen will, so muss man vor allen Dingen wohl zusehen, oh sie beide ihre völlige Freiheit gehabt haben, ob sie ohne allen äusserlichen Zwang auf die höchste Wirkung ihrer Kunst haben arbeiten können. LESSING.

From which of Lessing's writings is this extract taken?

4. What was the *Hainbund*? Name some of its members.

5. Translate:

Einsmahls *fiel* ihnen ein, dass eine Stadt wie Abdera billig auch einen schönen Brunnen haben *müsse*. Er sollte in die Mitte ihres grossen Marktplatzes *gesetzt werden*, und zu Bestreitung der Kosten *wurde* eine neue Auflage gemacht. Sie liessen einen berühmten Bildhauer von Athen *kommen*, um eine Gruppe von Statuen zu *verfertigen*, welche den Gott des Meeres auf einem von vier Seepferden gezogenen Wagen mit Nymfen, Tritonen und Delfinen umgeben, *vorstellte*. WIELAND.

Give rules for the position of the verb, participle, and infinitive in a German sentence by which you can explain the place of the words in italics in the above sentence.

6. Explain the terms *Umlaut* and *Ablaut*.

7. Translate:

After all, a journey up the Rhine, in the mists and solitude of December, is not so unpleasant as the reader may imagine. You have the whole road and river to yourself. Nobody is on the wing —hardly a single traveller. The ruins are the same, and the river, and the outlines of the hills; and there are few living figures in the landscape to wake you from your musings, distract your thoughts, and cover you with dust. LONGFELLOW.

Arithmetic.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 9—16 inclusive.

1. Given dividend 99201815, quotient 208, remainder 1207, find divisor.

2. Multiply 2 tons 5 cwt. 15 lb. 9 oz. by 27.

3. Divide £3815 6*s.* $2\frac{3}{4}$*d.* by 42.

4. Simplify $\frac{2}{7} \times \frac{1-\frac{2}{7}}{2} + \frac{4}{5} \times \frac{1}{10} + \frac{3}{5}\left(\frac{1}{2} + \frac{11}{14}\right) + \frac{3}{7}\left(\frac{2}{7} + \frac{4}{5}\right)$.

5. Divide £954 9*s.* amongst *A*, *B*, *C* so that *A*'s share may be to *B*'s :: 3 : 5, and *B*'s share to *C*'s as 10 : 11.

6. Multiply ·008 by ·0016, and divide the greater by the less.

7. Find the cost of 37 cwt. 3 qrs. 24 lb. at £10 12*s* 8*d.* per cwt.

8. Reduce £2 10*s.* 6*d.* to the fraction of £1 10*s.* 9*d.*, and state what fraction of 2 tons 13 cwt. is 1 ton 1 cwt. 1 qr.

9. Find the amount of £819 4*s.* in 6 years at $12\frac{1}{2}$ per cent. compound interest.

10. Simplify

(i) $\dfrac{3}{4 + \dfrac{2}{3 + \dfrac{2}{3}}}$;

(ii) $\left[\frac{3}{5} \div \left(\frac{4}{25} - \frac{1}{5}\right)\right] + \left[1 \div \left(\frac{2}{5} - \frac{1}{3}\right)\right] - \left[1 \div \left(\frac{2}{5} + \frac{1}{3}\right)\right]$;

(iii) $\dfrac{\frac{2}{3} \times \sqrt{3} \times \frac{1}{2} \times \sqrt[3]{2}}{\frac{5}{8} \times \sqrt[3]{2} \times \frac{3}{7} \times \sqrt{3}}$;

(iv) $\dfrac{1.18}{\cdot 152} \times \dfrac{3\cdot 04}{2\cdot 95} \div \cdot 00125$.

11. By purchasing railway shares at $22\frac{1}{2}$ per cent discount and selling them at 9 per cent. premium 300 guineas was gained. What was the original sum expended?

12. If I buy 28 pieces of stuffs at £4 a piece, and sell 10 of them at £6 each and 3 at £5, what rate per piece must I sell the remainder to gain 20 per cent.?

13. Multiply 21 mi. 3 fur. 90 yds. 1 ft. 3 in. by 40, and divide 184 lb. 4 oz. 2 drs. 1 scr. 7 grs. by 33.

14. Copper is $8\frac{9}{10}$, tin $7\frac{3}{10}$ times as heavy as water. If 20 cubic inches of tin be mixed with 30 cubic inches of copper, how many times as much as its own bulk of water will the mixture weigh?

15. Find the value of ·045 of 1 cwt. and ·8 of a year; also reduce 77 lb. to the decimal of a ton and 4 dwt. 15 grs. to the decimal of 1 oz.

16. What effect is produced on (i) the sum, (ii) the difference of two numbers if the same quantity be added to one and subtracted from the other number?

ANSWERS TO *OCTOBER* PAPER.

1. £310 4*s*. $4\frac{3}{4}d$. 2. Each woman, 13*s*. $10\frac{1}{3}d$.; each man, 4*s*. $7\frac{1}{3}d$.
3. 252, 789. 4. 7 days $5\frac{1}{4}$ hours. 5. 50, $74\frac{3}{8}$.
6. (i) $\frac{21}{32}$; (ii) $12\frac{3}{11}$; (iii) $\frac{867}{1980}$. 7. $\frac{106}{125}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{3}{125}$. 8. 1210·222.
9. 1010·5504, ·0157851. 10. $9\frac{99}{77}$. 11. £3 6*s*. $10\frac{4}{5}d$.
12. 11277 and 895. 13. £92 7*s*. $1\frac{5}{16}$. 14. £30.
15. (i) 16 min. $21\frac{9}{11}$ sec. to 3; (ii) 2 hrs. 27 min. $16\frac{4}{11}$ sec. 16. £50.

Geometry.

Junior, Senior, and Higher Local.

Junior work Nos. 1—8 inclusive.
Senior work Nos. 5—12 inclusive.
Higher Local work Nos. 8—16 inclusive.

1. Parallelograms upon the same base and between the same parallels are equal.

2. In any right-angled triangle the square described on the side subtending the right angle is equal to the squares described on the sides which contain it.

3. In a triangle, if the line bisecting the angles at the base be equal, the triangle is isosceles, and the angle contained by the bisecting lines is equal to an exterior angle at the base of the triangle.

4. Divide a line into two parts, such that the sum of their squares shall be double the square on another line.

5. Describe a square that shall equal a given rectilineal figure.

6. If from any point without a circle two straight lines be drawn, one of which cuts the circle, and the other touches it; the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, shall be equal to the square on the line which touches it.

7. If any chord of a circle be produced equally both ways and tangents to the circle be drawn on opposite side of it from its extremities, the line joining the points of contact bisects the given chord.

8. Of all parallelograms applied to the same straight line and deficient by parallelograms similar and similarly situated to that which is described upon half the line, that which is applied to the half and is similar to its defect is the greatest.

9. Triangles upon equal bases and between the same parallels are equal to one another.

10. Draw through a given point between two straight lines not parallel a straight line which shall be bisected in that point.

11. In what cases does Euclid prove triangles to be equal? Enunciate the propositions containing those proofs.

12. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

13. Through a given point draw a straight line which shall make equal angles with two straight lines given in position.

14. A segment of a circle being given, describe the circle of which it is the segment.

15. If a straight line be drawn to touch a circle and be parallel to a chord, the point of contact will be the middle point of the arc cut off by that chord.

16. If from any point without a circle two straight lines be drawn one of which cuts the circle and the other touches it, the rectangle contained by the whole line which cuts the circle and the part of it without the circle shall equal the square on the line which touches it.

Algebra.

Junior, Senior, and Higher Local.

Junior work Nos. 1—10 inclusive.
Senior work Nos. 5—15 inclusive.
Higher Local work Nos. 8—18 inclusive.

1. Divide the difference between
$(2x-3y+4z)^2$ and $(x-2y+3z)^2$ by $3x-3y-7z$.

Divide $a^{\frac{2}{3}}+b^3$ by $a^{\frac{1}{3}}+b^{\frac{1}{3}}$.

2. Multiply $\frac{1}{5}x^{\frac{1}{2}}-\frac{2}{3}a^{\frac{1}{3}}x^{\frac{1}{2}}+\frac{1}{6}a^{\frac{2}{3}}$ by $\frac{3}{2}x^{\frac{1}{2}}+\frac{5}{6}a^{\frac{1}{3}}$.

3. Simplify

(i) $\dfrac{a^2b^{-3}}{c^4}\times\dfrac{\sqrt{a^{-2}b^8}}{\sqrt{c^{-12}}}$;

(ii) $\dfrac{(x+z)\sqrt{y^2+z^2}-(y+z)\sqrt{(x^2-z^2)}}{z(x-y)}$
$$-\frac{2(z^2-xy)}{\{(x+z)\sqrt{y^2+z^2}+(y+z)\sqrt{x^2+z^2}\}}.$$

4. Solve the equations:

(i) $56x+278=47(x+y)$, $28y+832=17(x-y)$;

(ii) $\dfrac{x+2}{y+2}=\frac{1}{2}$, $\dfrac{x-2}{y-2}=\frac{1}{3}$;

(iii) $\dfrac{x^3-1}{x-1}+\dfrac{5(x^4-1)}{x^2-1}-\dfrac{5(x^3+1}{x+1}=8$;

(iv) $(x+5)(x-2)+\sqrt{(x+4)(x-1)}=36$.

5. Find the value when $x=\dfrac{a}{a+b}$ and $y=\dfrac{b}{a+b}$ of
$$\frac{ax^2+by^2}{x+y}-\frac{3(ay^2-bx^2)}{b-y}.$$

6. How many different combinations can be formed with the letters of the word "perpendicular"?

7. Write down the first 5 terms in the expansion of $(1-3x)^7$. Also write down the fourth term of $(2+3x)^{10}$.

8. Find the value of n which will make $x^2+8nx+64n-60$ a complete square.

9. Prove that the sum of the cubes of three consecutive numbers is divisible by the sum of the numbers.

10. If $b+c$, $c+a$, $a+b$ are in H.P., prove that c^2, a^2, b^2 are in A.P.

11. Transform 4783 from the denary scale to the scale of five. Add 2 to the result, and then again transform to the denary scale.

12. There are three numbers in G.P. The sum of the first and second is 44, and the sum of the first and third is 65.

13. Out of 64 Scotchmen and 72 Irishmen, how many committees can be formed, each containing 32 Scotchmen and 46 Irishmen?

14. Prove that the difference of the coefficient of the $(r+1)$th term and that of the rth term in the expansion of $(1+x)^{2n+1}$ is equal to the difference between the coefficient of the $(r+1)$th term, and that of the $(r-1)$th term in the expansion of $(1+x)^{2n}$.

15. A boy spends five shillings in apples and oranges, buying the former at 6 a penny and the latter at 4 a penny. He afterwards sells at cost price two-thirds of his apples and half of his oranges for three shillings. How many oranges did he buy?

16. Prove that every convergent to a continued fraction is in its lowest terms.

17. If α, β be the roots of $ax^2+bx+c=0$, prove that the quadratic equation whose roots are $\frac{\alpha^4}{\beta}$, $\frac{\beta^4}{\alpha}$ is

$$a^4cx^2+b\,(b^4-5ab^2c+5a^2c^2)x+ac^4=0.$$

18. Express in the scale of seven the number which in the denary scale is expressed as 74563429. Transform 15·25 from scale ten to scale eight.

ANSWERS TO *OCTOBER* PAPER.

1. (i) $\frac{2x(p+q)}{x^2-q^2}$; (ii) $192x^4y^4$.

2. (i) $x=\pm 9$, $y=\pm 1$; (ii) $x=\frac{7+\sqrt{1305+8\sqrt{321}}}{4}$.

3. $(a^2+b^2)(c^2+d^2)=(ac+bd)^2+(ad-bc)^2$. 4. Nine.

6. 45; 144. 8. $\frac{1371}{11000}$. 9. 32 *t* 122. 10. $\frac{1}{\sqrt{(x^{\frac{pm}{n}}+\frac{qm}{n})}}$.

11. $3+6+12+24$. 13. 2·9, &c. 14. 2.

15. $3ac^4$; 6, and this is the coefficient of the second term. 16. 3.

17. $\frac{1}{1+}\,\frac{1}{1+}\,\frac{1}{122}$.

Higher Mathematics.

Junior and Senior.

TRIGONOMETRY, MECHANICS, STATICS.

1. Trace the changes in sign and magnitude of $\tan A - \cot A$, as A varies from 180° to 360°.

2. Having given $\log 2 = \cdot 30103$, $\log 3 = \cdot 477121$, $\log 7 = \cdot 845098$, find log 28224, log 135, and $\log (\frac{8}{9}\frac{3}{4})^{\frac{1}{2}}$.

3. Define the secant of an angle, and draw a figure shewing the position of the revolving line when the secant of the angle is $\frac{4}{3}$; find all the angles for which the secant is $\frac{4}{3}$, calling the smallest of them α.

4. In the triangle ABC, prove that $c = b\cos A + \sqrt{(a^2 - b^2\sin^2 A)}$,

$$a \cos \frac{B-C}{2} = b + c \sin \frac{A}{2}.$$

5. Shew how to solve a triangle, having given two sides and the angle opposite to one of them. Under what conditions will there be (i) two triangles having the given parts, (ii) one triangle only, (iii) no triangle?

6. Find the radius of the circumscribed circle of a triangle in terms of its sides.

7. If two weights balance each other on a straight lever in any one position inclined to the vertical, they will balance each other in any other position of the lever.

8. Two bodies which together weigh 14 lb. are hung at the ends of a straight lever and are in equilibrium; if the fulcrum is six times as far from one end as from the other, find the weight of each body.

9. Find the resultant of three forces which act on a particle and which are not all in one plane. Shew that, when the directions of the three forces are mutually at right angles, the square of the resultant is equal to the sum of the squares of the three forces.

10. Distinguish between variable and uniform velocity, and say how each is measured.

11. A stream of water falls from rest at a height of 40 ft. upon a horizontal elastic plane, from which it runs freely off at the rate of 250 gallons per minute. Find the pressure on the plane. (1 gallon of water weighs 10 oz.)

Higher Mathematics.

Women.

TRIGONOMETRY AND CONICS.

1. Trace the changes in sign and magnitude of $\cos A - \sec A$, as A varies from 180° to 360°.

2. Shew that $\sin(A+B) = \sin A \cos B + \cos A \sin B$.

Hence find the sine of 105° and the sine of 135°.

3. Solve the equation:

$$\tan\left(\frac{\pi}{4}+\theta\right) = 3\tan\left(\frac{\pi}{4}-\theta\right).$$

4. Find the values between which x must lie in order that $\log(1{\cdot}08)^x$ may contain four digits.

5. Find an expression for the area of the triangle formed by joining the points of contact of the inscribed circle of a triangle with the sides, in terms of the radii of the circumscribed and inscribed circles and of the triangle itself.

6. Enumerate De Moivre's Theorem, and demonstrate the series:

$$\sin\alpha = \alpha - \frac{\alpha^3}{\underline{|2}} + \frac{\alpha^5}{\underline{|5}} - \ldots \qquad \cos\alpha = 1 - \frac{\alpha^2}{\underline{|2}} + \frac{\alpha^4}{\underline{|4}} - \ldots$$

7. If QV be an ordinate of the diameter PV of a parabola, then $QV^2 = 4SP \cdot PV$. PQ is a focal chord, S being the focus; find the axis.

8. If from the foci S and H of an ellipse the perpendiculars SY, HZ be let fall on the tangent at any point P, prove that Y and Z lie on the circumference of the auxiliary circle.

9. Find the polar equation to a central conic.

From the equations thus obtained, prove that the major axis is the greatest, and the minor axis the least diameter of the ellipse, and the diameter which makes a greater angle with the axis major is less than one which makes a lesser angle.

10. Find the equation to the hyperbola referred to the asymptotes as axes. Give a geometrical interpretation of the equation thus formed.

11. Prove that the area of the parallelogram circumscribing the curve where sides are parallel to conjugate diameters is constant.

12. Determine the condition that the line $lx + my = d$ should touch the conic $Ax^2 + 2Bxy + Cy^2 + 2Dx + 2Ey + F = 0$.

Higher Mathematics.

Women.

STATICS, DYNAMICS, ASTRONOMY.

1. Describe the differential screw, and shew by what means of construction the mechanical advantage may be indefinitely increased.

2. Three forces, each equal to 12 lb., act on a particle, and the angle between the directions of any two forces is 30°. Find the resultant and the angle between the direction of the resultant and that of each of the forces.

3. Enunciate the principle of virtual velocities, and prove it for the case of a single particle acted upon by any system of forces in the same plane.

4. Define the coefficient of friction between two substances, and enumerate the laws of friction.

5. A particle is projected with a velocity of 33 ft. per second at an elevation of 45°. Find the direction of its motion when at a height of 33 ft., and its distance from the point of projection at that time.

6. Find the horse-power of a steam-engine which projects 233 three-pound shots in two minutes, with a velocity of 1232 ft. per second.

7. A chain held at one end is just allowed to touch a table at the other end, and is then gradually allowed to fall upon the table. Find the pressure at first, and the whole pressure on the table when the whole chain has fallen upon it.

8. A body is projected from the foot of an inclined plane with a velocity of 24 ft. per second at an angle of 75°; find the vertical distance from the ground, and also the distance from the foot of the plane at which the body strikes the plane.

9. When is a heavenly body said to be in direct and when in retrograde motion? Describe the apparent motion of a superior planet as seen from the earth, and account for the stationary points of a planet's orbit.

10. Define *parallax*, and say in what position in the sky a heavenly body is unaffected by parallax. What is the meaning of parallax in the case of the fixed stars?

11. Explain the causes to which the almost regular occurrences of lunar eclipses are due.

Natural Philosophy.

Junior and Senior.

(*a*) CHEMISTRY; (*b*) PRACTICAL CHEMISTRY; (*c*) STATICS AND HYDROSTATICS EXPERIMENTALLY TREATED; (*d*) THE EXPERIMENTAL LAWS OF HEAT; (*e*) ELECTRICITY AND MAGNETISM.

Junior Students will only be examined in three of the subjects (*a*), (*b*), (*c*), (*d*). *Senior Students will only be examined in* (*a*), (*b*), *and one of the subjects* (*c*), (*d*), (*e*).

(*a*)

1. Give the chemical symbols and calculate the percentage composition of lead nitrate, sodium sulphate, and potassium chloride.

2. What is the action of lead on water? Is water brought through leaden pipes rendered poisonous?

3. Explain fully the way in which sulphuric acid is manufactured.

(*b*)

4. Describe an experiment shewing that carbon dioxide contains a volume of oxygen equal to its own volume. Explain this.

5. How can ferrous and ferric salts be distinguished? How would you test for potassium and sodium salts?

(*c*)

6. A stone is thrown upwards with a velocity of 60 feet per second. Find the height to which it will rise.

7. Explain and illustrate by examples the third law of motion, Action and re-action are equal and opposite.

8. What weight on the handle of an hydraulic press, with a lever giving a mechanical advantage of 6 will sustain a weight of 30 tons, the sectional area of the small plunger being 1 sq. c.m., and that of the larger plunger 100 sq. c.m.?

(*d*)

9. Describe a calorimeter. Why cannot quantities of heat be measured by a thermometer?

10. If 4 lb. of water at 80°C. be mixed with 5 lb. at 20°C., what will be the temperature of the mixture? If to this mixture is added 2 lb. of ice at −5°C., what will be the resulting temperature?

11. The bulb of a thermometer is covered with moist muslin; will the thermometer indicate a higher or lower temperature than one not so treated? Give reasons for your answer.

(*e*)

12. Describe methods by which an ordinary bar of steel can be converted into a permanent magnet.

13. If two brass balls are insulated and charged with positive electricity, by what means can you discover whether the charges of both are equal or not?

14. Explain the nature and method of obtaining (i) the electric spark, (ii) electric light.

Science.

Junior and Senior.

Junior: (*a*) BOTANY; (*b*) ZOOLOGY.
Senior: (*a*) BOTANY; (*b*) ZOOLOGY; (*c*) PHYSICAL GEOGRAPHY AND GEOLOGY.

No Student will be examined in more than one of the subjects (*a*), (*b*), (*c*).

(*a*)

1. What is sap? Give an account of the movement of sap in a vascular plant.

2. By what means are plants, whose stems are not capable of supporting their own weight, able to climb?

3. Explain the structure of the fruit of the grape, the walnut, the apple, and the wheat plant.

4. Give examples of plants whose stems and roots yield good food, and explain how they are modified.

(*b*)

1. Describe the structure of the fresh water Hydra, and compare it with that of any sertulacian.

2. Describe the structure of serpula, and refer it to its place in the animal kingdom.

3. How is an amphibian distinguished from a reptile?

4. What are the characteristics of the ungulata?

(*c*)

1. Describe the three kinds of coral reefs.

2. What proofs are there of oscillation of level of the earth's surface?

3. What reasons are there for supposing that the interior of the earth has a very high temperature?

4. What deposits have been formed by ice action, and in what manner?

Science.

Higher Local.

(*a*) ELEMENTARY CHEMISTRY, PHYSICS, AND BIOLOGY; (*b*) CHEMISTRY; (*c*) PHYSICS; (*d*) BOTANY; (*e*) ZOOLOGY; (*f*) PHYSIOLOGY; (*g*) PHYSICAL GEOGRAPHY AND GEOLOGY.

All Students are expected to satisfy the Examiners in (a) and in one at least of the subjects (b) to (g). No Student will be examined in more than three of the subjects (b) to (g) in one year.

(*a*)

1. How is heat produced chemically?

2. Enunciate and give illustrative examples of (i) the law of definite proportions; (ii) the law of multiple proportions; (iii) the law of equivalent proportions.

Explain the terms *isomerism* and *atomicity*.

3. Define the terms *fluid, hydrostatics, specific gravity*. Describe any experiments which prove that fluids transmit pressure equally in all directions, and mention a few effects of this property.

4. Describe fully the construction and action of the common pump.

5. Draw diagrams of chara, shewing (i) the arrangement of cells at a node, (ii) the structure of the spore fruits and antheridia, (iii) the direction of the protoplasmic movements in a cell and the indifferent line.

6. Trace the life-history of chara, pointing out how alternation of generations occur, and explain what you mean by this phrase.

(*b*)

1. Give a short account of the methods by which atomic weights may be determined.

2. Describe the means used in the analysis of air to determine its composition (i) by weight, (ii) by volume.

3. Give an account of the preparation and properties of (i) chlorine gas, (ii) hydrochloric acid gas. To what is the bleaching action of chlorine and bleaching powder due?

4. Compare the properties and compounds of chlorine, bromine, and iodine.

(*c*)

1. Describe carefully the construction of the Bramah press, also of the safety valve.

2. A globe radius six inches floats in water when half immersed. Find its weight.

3. How may the specific gravity of (i) a solid, (ii) a liquid, and (iii) a gas be ascertained?

4. A body whose weight is 300 grains sinks to the same depth in water and spirits of wine when loaded with 80 and 17 grains respectively. What is the specific gravity of the spirits of wine?

(*d*)

1. What is the chief difference between the reproduction of phanerogams and that of the higher cryptogams? Shew this by reference to the fir.

2. Notice the chief points in the general structure of the hyacinth. What is the minute structure of the root?

3. What is the function of the pistil? Describe the chief varieties of pistil.

4. How does the stem of a dicotyledon increase in thickness? Give the structure of the leaf of a dicotyledon.

(*e*)

1. Describe the structure and habits of a typical foraminifer. What features have been made the basis of various classifications of the foraminifera?

2. What is an odontophore? Describe any three you know.

3. Describe the structure of any kind of cuttle-fish, and contrast it with that of a typical gasteropod.

4. Describe the alimentary system of a bird.

(*f*)

1. Describe the valves of the heart, and the part they play in the circulation.

2. Compare a transverse vertical section through the walls of an artery, a vein, and a capillary.

3. Explain the connexion between the vagus nerve and the heart's beat.

4. What view is maintained in Foster's *Text Book* concerning the vaso-motor mechanism in shamals?

(*g*)

1. Give a general account of atmospheric circulation and of its causes. Can winds be reckoned among the agents of denudation?

2. Explain what theories are held as regards the formation of coal, flint, and the several sorts of limestone. State how you would recognise a fresh-water limestone, and in what British counties they occur.

3. Under what conditions do you suppose the old red sandstone to have been deposited? What forms of life characterised it? Account for the red colour of the rocks?

4. Make a table of the common igneous rocks, classing them under the heads, crystalline, half-crystalline, and glassy, and as asidic and basic. Describe granite, and state how you would recognise its constituents.

Logic.

Higher Local.

1. Explain what is meant by *definition*, and point out the distinction between nominal definitions, and those which are not nominal.

2. Give the meaning of the following terms: axiom, distribution of a term, mediate inference, mood, ambiguous middle term, illicit process of a term.

3. Give and explain the fundamental canons of the syllogism. State fully what is meant by the *Dicta de omni et nullo* of Aristotle.

4. Write out the rules of the syllogism. Which, if any, of these rules do the following syllogisms break?

(i) You and I are different persons. I am John; therefore you are not John.

(ii) Oxford men are learned. *A* is a man of Oxford; therefore he is learned.

(iii) *B* became ill after exposure to bad air, therefore that exposure was the cause of his illness.

(iv) No man is perfect. Your son is no man; therefore he is perfect.

(v) The Board School system is not wholly to be approved of; but we may approve of the teaching of classics to girls, for that is not part of the Board School system.

5. Assuming the following premises (i) and (ii) to be correct, state whether any or all of the conclusions (iii), (iv), (v), (vi) are correct, and give fully your reasons:

(i) All authors are liable to error.

(ii) All authors possess energy.

(iii) All persons liable to error possess energy.

(iv) All persons possessing energy are liable to error.

(v) Some persons liable to error possess energy.

(vi) Some persons possessing energy are liable to error.

6. Write from memory the mnemonic verses containing the valid moods of the syllogism. Construct syllogisms in the 2nd, 3rd, and 4th figures, and reduce them to corresponding moods of the first figure.

7. Write a short essay on logical method.

French History.

(*a*) GENERAL, 1100—1328; (*b*) SPECIAL, 1661—1678.

(*a*)

1. What do you know of the constitution of the feudal kingdom of Jerusalem?

2. Give an account of the religious crusade in Provence.

3. What do you know of St. Louis' Pragmatic Sanction? On what grounds is it held to be not a genuine document?

4. Give the history of the struggle between Philip IV. and Pope Boniface VIII.

5. What was the origin of the "Salic law of France"?

(*b*)

6. Give some account of the administration of home affairs during the earlier part of the reign of Louis XIV.

7. Give the history of the relations between Louis XIV. and Charles II. of England. Enumerate the chief points in the Treaty of Dover.

8. What were the causes which led to the formation of the Triple Alliance? What was the object of that alliance, and what did it actually effect?

9. Sketch the career of William of Orange from his election as Stadtholder to the peace of Nimeguen.

Constitutional History.

1. English History Paper, No. 1.

2. English History Paper, No. 3.

3. English History Paper, No. 4.

4. Give an account of taxation during this period, arranged under the heads, Grant, Incidence and Assessment.

5. Describe the judicial changes of Henry II.

6. Give an account of the official position and functions of the four great officers of the crown.

7. Translate and comment on Magna Charta, clause 14, "Ad habendum commune consilium regni."

8. Describe carefully the circumstances attending the coronation of John. Give the terms of the coronation oath.

Political Economy.

Higher Local.

1. "Economics is both an inductive, and a deductive science." Give and criticise Cairnes' opinion on the subject.

2. Give a short history of the English poor laws.

3. (i) "A fall in the rate of interest in a country is likely to check the growth of capital in some ways and to promote it in others." Explain this as fully as you can.

(ii) What is the advantage of a high rate of interest? Is this advantage likely to be permanent? Why is the rate of interest so low in England at present? Why does the rate of interest vary?

4. Shew the great importance of the organisation of industry.

5. Senior Paper, No. 2.

6. Senior Paper, No. 3.

7. Senior Paper, No. 5.

Political Economy.

Senior.

1. What are the advantages of division of labour?

Distinguish between simple co-operation and complex co-operation. What limits division of labour? Comment on Mr. Wakefield's plan of colonisation. What do you consider are the possible disadvantages of division of labour?

2. "Political economists and legislators have generally drawn a distinction between land and all other forms of wealth." Prove this, and shew what reasons there are for this distinction. Give your opinion as to the value of these reasons.

3. Write an essay on competition, especially noting its effects at present in England.

4. Give a short account of any socialistic scheme with which you are acquainted. Distinguish between socialism and communism.

5. Discuss the economic results of slavery. Can you explain why slavery flourished in the southern part of the United States, while it did not exist in the northern part?

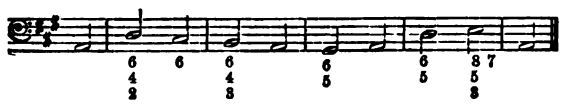
6. Point out some of the differences between an Irish farmer in Ireland, and an English farmer in England.

7. Tell me what you know of the following: a peasant proprietor, a cottier, ryot tenure, a metayer, the margin of cultivation, corn rents.

8. Higher Local Paper, No. 2.

Music.

Junior and Senior.

1. Add treble, alto, and tenor parts to the following bass. Write the exercise in vocal score, and give the root of each chord.

2. Write an example of a perfect and plagal cadence in the key of F minor.

3. Give examples of a major and minor sixth, augmented seventh, diminished third, major ninth, augmented second, and minor octave.

4. In what divisions of time should the following signatures be placed, and why? $\frac{2}{2}$, $\frac{6}{4}$, $\frac{9}{8}$, $\frac{3}{4}$, $\frac{4}{2}$, $\frac{12}{16}$.

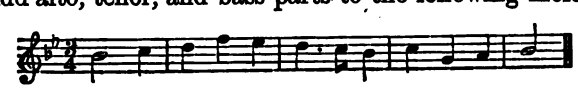
5. Give six Italian terms which are used to regulate the *pace* of the music.

Senior Students only.

6. Explain the chord of the dominant ninth and its inversions, and say how they differ in major and minor keys. Write examples in the keys of G major and E minor. Resolve each chord, and figure the bass.

7. Define *suspension*, and distinguish between single and double suspensions. Write (in four parts) examples of those most commonly used. Prepare and resolve each, and figure the bass.

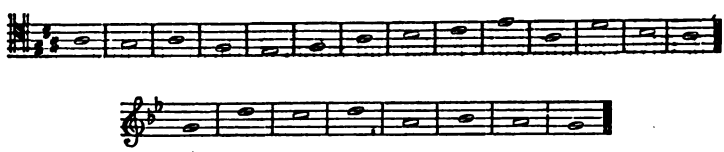
8. Add alto, tenor, and bass parts to the following melody:



Music.

Higher Local.

1. Add three parts to figured basses No. 52 and 53 in Macfarren's progressive exercises.

2. Write two-part counterpoint of the first species above and below the following subjects:

3. Harmonise in four parts, and *without the aid of an instrument*, the "Old Hundreth" hymn-tune.

4. Give an exact description of the "first movement form" in the highest technical perfection to which it was brought by Mozart, and explain why his movements are so far surpassed by those of Beethoven, although the formal outline is the same in both.

5. Say what you know of the systems of musical notation in use before the invention of notes in the twelfth century, and explain the origin of the clef and stave.

6. Write an essay on vocal music. (Keep in view all styles of vocal music, and discuss particularly the relative importance of, and connexion between, the words and the music.)

Teachers' Examination.

The Theory, History, and Practice of Education.

Special Subjects: *The Life and Work of Pestalozzi; Milton's Tractate on Education.*

1. What exactly do you understand by the phrase "natural education"? Discuss the proposition that formal education must be based on natural education.

2. What are the principles on which rewards and punishments should be awarded? What different kinds of rewards and punishments do you consider best adapted to ordinary school life?

3. What place ought physical training to take in the school curriculum? Discuss in detail your plan for introducing such training into a girls' school.

4. Compare the educational systems of Pestalozzi and Froebel. Briefly notice and discuss any objections you have heard made to Kindergarten training.

5. "In childhood the governing force is from without,—authority; in maturity it is from within,—principle; and during the progress from childhood to maturity, government by mere authority should gradually give place to self-government." Discuss the principle here asserted, and shew the bearing on school discipline.

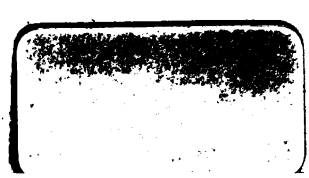
Editorial.

THE December number being issued after the commencement of the Junior and Senior Cambridge Examination, we shall curtail the papers for those students, and give in Literature and History one general paper on the work of the year, part of which will be suited to both Junior and Senior students, while a few more difficult questions will be given for Seniors only. In languages general, grammatical papers, with short passages for translation, will be given. For students under sixteen we shall, as usual in June and December, give some papers on English History, Geography, Grammar, Latin, French, German, Arithmetic, Algebra, and Geometry. Copies of these papers, printed separately for the use of schools, may be obtained at the Office.

We have received the names of some students wishing us to form an Italian Class for the Higher Local; if a few more desire one, and will send in their names early in December, a course of Italian shall be commenced in our January number.

We must again remind Higher Local Students that although in the examination Group E, Elementary Chemistry, Physics, and Biology form one section, they are to be treated by those taking that paper as separate subjects, sent in on separate papers as for different examiners.

Some of our students are not as yet giving us such neat, well-arranged papers as we should wish to receive; the answers, having all been prepared before the paper is attempted, may as well be written in regular order. It is not well that an answer should be begun in a way that leaves it entirely unconnected with the question; it should rather take such a form that the question might be known at once from the answer.

The last part of Rule 4 appears to puzzle some students; we do not want to know how long each answer takes to write, nor do we require to be informed how long has been spent in preparation, but we wish to see how quickly the answers to the whole paper can be written out.

We do not think the habit, which we note gaining ground, of writing the papers a little bit at a time at all a good one, but would wish that, as far as possible when all the preparation has been completed, the paper should be written off as a whole. The illegibility of some of the handwriting which comes to us is deplorable; we would call attention to this, because a little care is alone required to remedy a fault which is decidedly grievous for examinees.